



FRIDAY, JULY 9, 1880.

MASTER MECHANICS' ASSOCIATION.

Thirteenth Annual Convention.

We continue this week our abstract from the official report of the proceedings of the Convention at Cleveland.

SECOND DAY—CONTINUED.

The report of the Committee on Prevention of Noise from Safety Valves being then taken up:

Mr. RICHARDS mentioned several devices in use on various roads, and said the general objection was their first cost. His information was chiefly from Eastern roads. Several devices called mufflers were used, and there was also an arrangement by which the steam was carried into the tank and condensed there. This would sometimes heat the water so that an injector would not work.

Mr. KAUFHOLZ had used the blow-back safety valve and thought it a perfect success. He had had no trouble with injectors, though the water in the tank was heated up to 120°, or thereabouts. They had used them for three years, and they had cost nothing, except the first cost of putting them in. They had cost nothing for repairs.

Mr. HAYES said the patentees charged a very high price for these valves, and if the engineers were not careful the water in the tank became too hot. He thought the best way was to set your valves to a certain pressure, and be careful that your boiler did not get above that.

Mr. SEDGLEY said the blow-back valve was very expensive, and it was a question whether it would not be better to use a muffler, which was very much cheaper. He asked the cost of the various appliances mentioned.

Mr. RICHARDS said that there were all sorts of appliances, and the cost of them varied from \$4 to \$250. The question considered by the Committee had not been the cost, but which was the best.

Mr. LANDER said the main question was whether they should use a muffler or a blow-back valve which carried the steam into the tank.

The discussion was then closed. Various communications, invitations, etc., were then read and acted on.

The Standing Committee then reported the following subjects for report and discussion: Boiler Construction; Improvements in Shop Tools and Machinery; Best Means of Obtaining Higher Economy in Burning Coal; Best Plan or Construction of Locomotives for Fast Passenger Service.

The report was accepted and the Convention adjourned until next day.

THIRD DAY'S PROCEEDINGS.

At the opening of the session Mr. RAYMOND read a paper upon the patent relations of railroad improvements and upon the liability of manufacturers and dealers in railway supplies for royalties upon devices furnished to railroad companies. He dwelt upon the necessity of purchasers of railroad improvements to ascertain whether the same were patented or patentable to avoid future complications and large bills of expense.

The paper was received and ordered printed in the report, and a vote of thanks tendered to the author.

The report of the Standing Committee on subjects for discussion was then taken up.

Mr. LAUDER said that only four subjects had been reported, and he thought the Committee should be instructed to report another.

Mr. SPRAGUE agreed that it would be better to have five subjects.

Mr. JOHANN said the Committee would have no objection to selecting another subject, but thought that four, if thoroughly discussed, would be enough.

The report was then received. A Committee on Resolutions was then appointed, consisting of Messrs. Forney, Sedgley and McAlpine.

An additional report from the Committee on Prevention of Noise from Safety Valves, prepared by Mr. Howard Fry, was then read.

The report of the Committee on Shop Tools and Machinery was then read (published on page 287). It was received.

Mr. FORNEY referred to the fact, that the lithograph of the standard journal-bearing for the standard car and tender axle was very unsatisfactory. He moved that a committee of five be appointed to confer with a similar committee from the Master Car-Builders Association, to consider this subject of a standard journal-box and to see if any changes were desirable.

The motion was seconded and carried.

Mr. FORNEY then brought up the subject of uniform screw-threads. He said that there had been much discussion over this and the difficulties in the way of securing perfect uniformity had been found to be very great. Several meetings of interested parties had been held in New York, and had finally resulted in turning the matter over to Mr. Sellers, who promises that the matter shall soon be brought to some uniform system, so that everyone can have taps and dies of a true standard.

A paper prepared by Mr. Charles A. Smith, of St. Louis, associate member, on "Experiments made on the change of temperature of steam during its stay in the engine," was then read by the Secretary (published on page 265).

It was received and ordered to be published in the report.

The Committee to Nominate Officers presented its report.

The President positively declined to serve another year. After some discussion over various candidates the Association then proceeded to ballot for officers, and Mr. J. N. Lauder was chosen President.

The SECRETARY was then, on motion, instructed to cast the unanimous ballot of the Association for Mr. Reuben Wells as First Vice-President.

For Second Vice-President a ballot was taken, and Mr. J. D. Barnett was chosen.

On motion, the election of Secretary and Treasurer was postponed one year, continuing Messrs. J. H. Setchel and S. J. Hayes in those offices.

A vote of thanks to Mr. N. E. Chapman, the retiring President, was adopted, and a committee (Messrs. Raymond, Sedgley and Johann) appointed to prepare suitable resolutions.

Mr. CHAPMAN returned thanks briefly. On motion, the sum of \$600 was voted to the Secretary for his services during the past year.

The Committee on Resolutions reported as follows: They recommend that the thanks of this Association be extended to the Rev. Dr. Charles Pomeroy, Mayor Herrick, the Board of Trade of Cleveland, Cleveland Rolling Mill Company, Union Steel Screw Works, the Chisholm Shovel Works, the Otis Iron and Steel Works, the Standard Oil Company, the

Cleveland & Pittsburgh Railway Company, the proprietors of the Kennard House, members of the press, the Committee of Arrangements, and other citizens of Cleveland, for the services they have rendered and the hospitalities extended to the members of this Association during their stay in this beautiful city. The resolution was unanimously adopted.

A recess of five minutes followed. On reassembling a vote was taken on the selection of the next place of meeting. Providence receiving a majority on the second ballot, that city was declared the choice of the Association.

Mr. RICHARDS, from the Committee on Finance, reported the collection of \$255.

The President then declared the Association adjourned, to meet in Providence the second Tuesday in May, 1881.

New Southern Railroad Combination.

The Atlanta Constitution has the following regarding the new Southern combination of railroads:

It has been evident for some time that a movement was on foot to consolidate the railroads of Virginia, North and South Carolina, and Georgia. Bradstreet's Richmond correspondent has written a letter fully setting forth the philosophy and intentions of this big scheme. It was intended to make this combination the counterpart of the Louisville & Nashville combination west of the Alleghenies. Negotiations to effect it were begun some eighteen months ago and are now about complete.

For some years it has been evident that the traffic of the great region of country east of the Alleghenies and north of Atlanta, Ga., has tended more and more in the direction of gaining a tide-water outlet north of Cape Hatteras; this is obedience to the laws of competition under which the railroad has gone far to bid defiance to the water-way, which was once thought to be secure against all comers. The perils of the ocean route around Cape Hatteras have contributed to a preference for the all-rail route to tide-water or near the capes of the Chesapeake. With this marked tendency as the basis of calculation, it occurred to a number of representative capitalists to bring the South Atlantic railway system practically under one management. Well-known business men of Richmond and Baltimore were induced to interest themselves in the scheme. The master spirits of the movement, so far as relates to active energy, have been William P. Clyde, of New York, and Gen. T. M. Logan, of Richmond, who have conducted all the negotiations. Among others directly interested are Mr. H. B. Plant, of New York, Messrs. W. T. Walters and B. F. Newcomer, Baltimore, Mr. Charles M. McGhee, of Tennessee, and Messrs. William H. Palmer, A. Y. Stokes, Thomas Branch, and A. S. Buford, of Richmond.

The Richmond & Danville Railroad, extending from Richmond southwesterly to Danville, near the North Carolina line, from the date of its completion has constituted the central and controlling artery of the South Atlantic system. To secure control of this line, as the basis of the new scheme, was the first step in bringing about the desired combination. A controlling interest of the Richmond & Danville line was owned by the Pennsylvania Railroad, and it so happened that about as the plans of the syndicate began to take shape the Pennsylvania people purchased the Charlotte, Columbia & Augusta Railroad, which extends from Charlotte, N. C., across to Augusta, Ga. This done, the syndicate set about purchasing all the interests of the Pennsylvania Railroad south of Richmond. This company held 24,000 shares of the Richmond & Danville road—a controlling interest. These were purchased and a transfer effected to the syndicate, the contract having been closed on June 1. The willingness of the Pennsylvania people to relinquish their control sprang from a desire to confine the company's direct operations hereafter to points north of the Potomac.

Along with the main line of their purchased road, the syndicate secured control of the Danville Company's leased lines and tributaries, comprising the Charlotte, Columbia & Augusta, referred to above, the Piedmont, running from Danville to Greensboro, North Carolina, and the North Carolina Railroad from Goldsboro to Charlotte. Thus was secured the key to a very important system of rail transportation, and via the Richmond & York River line from Richmond, a rail and water route under the control of the Messrs. Clyde, the way was open to tide-water. A controlling interest in the Greenville & Columbia Railroad of South Carolina was then purchased, and an agreement entered into whereby the North Carolina road is to be speedily completed by way of Asheville to Paint Rock, Tenn., with the result of making a through connection with the system of roads west of the mountains. Connection is to be made with the East Tennessee, Virginia & Georgia Railroad at Morristown, and a cordial understanding is reported to have been made with this road, whereby a good portion of the traffic which formerly sought the Eastern & Northern Railroad via Bristol, Tenn., will in the future pass through the mountains of North Carolina and go northward to Richmond over the Danville route. And, in consideration of this advantage, the Tennessee road named is to be constructed at the earliest dates possible a short and direct communication westward with the Cincinnati Southern road. The connection through the mountains of North Carolina will constitute the shortest practicable route between the Northwest and the states of the Southern seaboard. The combination has direct connection with Atlanta, Georgia, and the Southwest over the Atlanta & Charlotte Air-Line, whose interests are necessarily bound up with those of the syndicate.

Such is the gigantic enterprise which seems assured of success. A reporter of the Constitution called on Col. G. J. Foreacre, General Manager of the Atlanta & Charlotte Air-Line, yesterday, and asked his opinion of the combination and how it affected his line. He says the Air-Line is no part of the combination, and does not contemplate becoming so. It is the short line which the new combination will use, and it will co-operate with it heartily, as their interests are identical. Col. Foreacre is very much in hope that the proposed line from Afton, Va., across the mountains of North Carolina, to Toccoa, on the Air-Line, will be built. He says that he has recently heard that the survey of the line will be pushed ahead without delay, and the construction be completed as quickly as possible. It is said that Scotch capital is pushing the enterprise. The proposed line would, in the opinion of Col. Foreacre, be of great advantage to Atlanta.

As to the combination referred to, in the opinion of some, it will not materially affect the interests of Atlanta, but it is impossible that it should injure them. The Atlanta & Charlotte Air-Line may be very much benefitted. Nearly all the leading Southern lines are now systematized into great combinations.

—Mr. Thomas Burke, Road-Master of the Louisville Division of the Ohio & Mississippi, died at his residence in North Vernon, Ind., June 7. He had been on the road for 20 years.

—Mr. John N. Denison has resigned his position as Assistant Treasurer of the Chicago, Burlington & Quincy Company on account of ill health. He has been connected with the company for many years.

The Belpaire Fire-Box.

At the late convention of the Master Mechanics' Association, there was a good deal of discussion of the merits of various forms of construction of fire-boxes, and reference was then made to the Belpaire system. As this is very little known in this country, we have had engravings made from drawings of a boiler for a freight locomotive with six wheels coupled, for the Belgian state railways. These drawings have been furnished by Mr. A. Huberti, E. gineer attached to the administration of railways in Belgium.

The engravings show the construction of this fire-box so clearly that little or no description is needed. Fig. 1 is a longitudinal section; one-half of fig. 2 is a back end view and the other half a transverse section. The top of the fire-box, it will be seen, is flat and flush with the top of the barrel of the boiler. Where the square top of the fire-box joins the cylindrical part of the barrel, there is a square offset formed by a plate flanged both ways. The flat top and the crown-sheet are stayed together by stay-bolts, as shown. The thread on the upper ends of these is made of a larger diameter than that on the lower end, so that they can be inserted without screwing their whole length through the outer hole. It also makes it unnecessary to cut a screw from one end to the other of the stay-bolt, but only for a sufficient distance at each end to enter the holes in the plates.

The side plates are stayed above the crown-sheet with three rows of transverse rods, which are screwed into these plates and extend from one side to the other with nuts on each side of the plate as shown. The back end is stayed by thick plates P P, which are attached to the ends and sides by angle-iron, A A. These are all shown in dotted lines in fig. 2. The plates P P are also strengthened by two heavy braces B B, each with a boss C on the back end, which is fastened to the plates P P by a strong bolt, D. The front end of the brace is attached to the shell of the boiler by a lug, L. This it will be seen makes a very strong system of bracing. The great advantage of it is that all the stays and braces are directly in the line of strain. The flat top will also spring more or less, so as to allow for the difference in expansion of the inner and outer plates which is difficult to provide for if the outer shell is circular or cylindrical in form. Staying a crown-sheet with stay-bolts also has the great advantage that the circulation of water above it is not nearly so much obstructed as it is when crown-bars are used. Considering its advantages, it is somewhat surprising that this form of fire-box has not been introduced into this country. It is extensively used on the continent of Europe, and we have no hesitation in speaking of it as altogether the best form for this part of locomotives.

In Belgium fire-boxes like the one illustrated are much used for burning fine coal, and in a letter written by Mr. Huberti in 1878 he says:

"I read in your number of Sept. 20, 1878, page 453, 'Austrian boilers at the Paris Exhibition,' that in all European countries there is manifest a general tendency to burn fine coal, and that, you think, this practice began in Belgium. This observation, which is entirely correct, raises an interesting question for railroad managers, and I imagine that your readers will be glad to know the reasons which have caused the adoption of fine coal (*menu*) on the lines of the Belgian government, and have determined the administration to employ it generally.

"It was in 1850 that M. Belpaire, then Chief of the Motive Power Department, made the first experiments with the use of fine coal, and it was in 1860 that was constructed the first engine designed to burn this fuel.

"M. Belpaire's fundamental idea was to treat the locomotive boiler like a stationary boiler, so far as regards the provision of fuel, and thus to be able to substitute a fine fuel of inferior quality for lump coal, *briquettes* and coke.

"Two conditions were required by the use of this fine fuel:

"1. A considerable grate surface. To produce a given quantity of steam in a given time it is necessary to burn a given quantity of coal. Now in order to permit the passage of air through the fine fuel it must not be more than 5 to 10 centimetres (2 to 4 in.) thick on the grate. If the thickness is small, the surface must be great. Therefore a corollary of the use of fine coal is a grate of large dimensions.

"2. Grate bars placed close together in order to prevent the coal from falling through the grate, and also in order to cause the air to be mixed with the fuel more completely—a mixture which is favored by a comparatively slow movement of the air through the grate and the coal.

"These two conditions were realized in the locomotives with the Belpaire fire-box. Eight patterns of these locomotives are in operation. Their fire-boxes have the following dimensions:

	Length, metres.	Width, metres.	Surface, square metres.
1. Passenger locomotive, with separate tender	2.737	1.114	3.05
2. Passenger engine for steep grades, with separate tender			
3. 8-wheeled passenger tank engine, with 6 wheels coupled	2.737	1.074	2.94
4. 10-wheeled passenger tank locomotive, with 6 wheels coupled			
5. Freight engine, with separate tender.			
6. Freight engine, with separate tender, for steep grades			
7. Tank freight engine for steep grades	2.064	1.90	3.92

"The large dimensions have had one happy result, which, however, it was easy to foresee, that is, the fire-box became an almost perfect smoke-consumer. If care is taken to put on fresh coal at the front of the grate the carbonic oxide produced by incomplete combustion, and the smoke, have to pass over a long incandescent surface where they are burned up completely. I will add, moreover, that the large radiat-

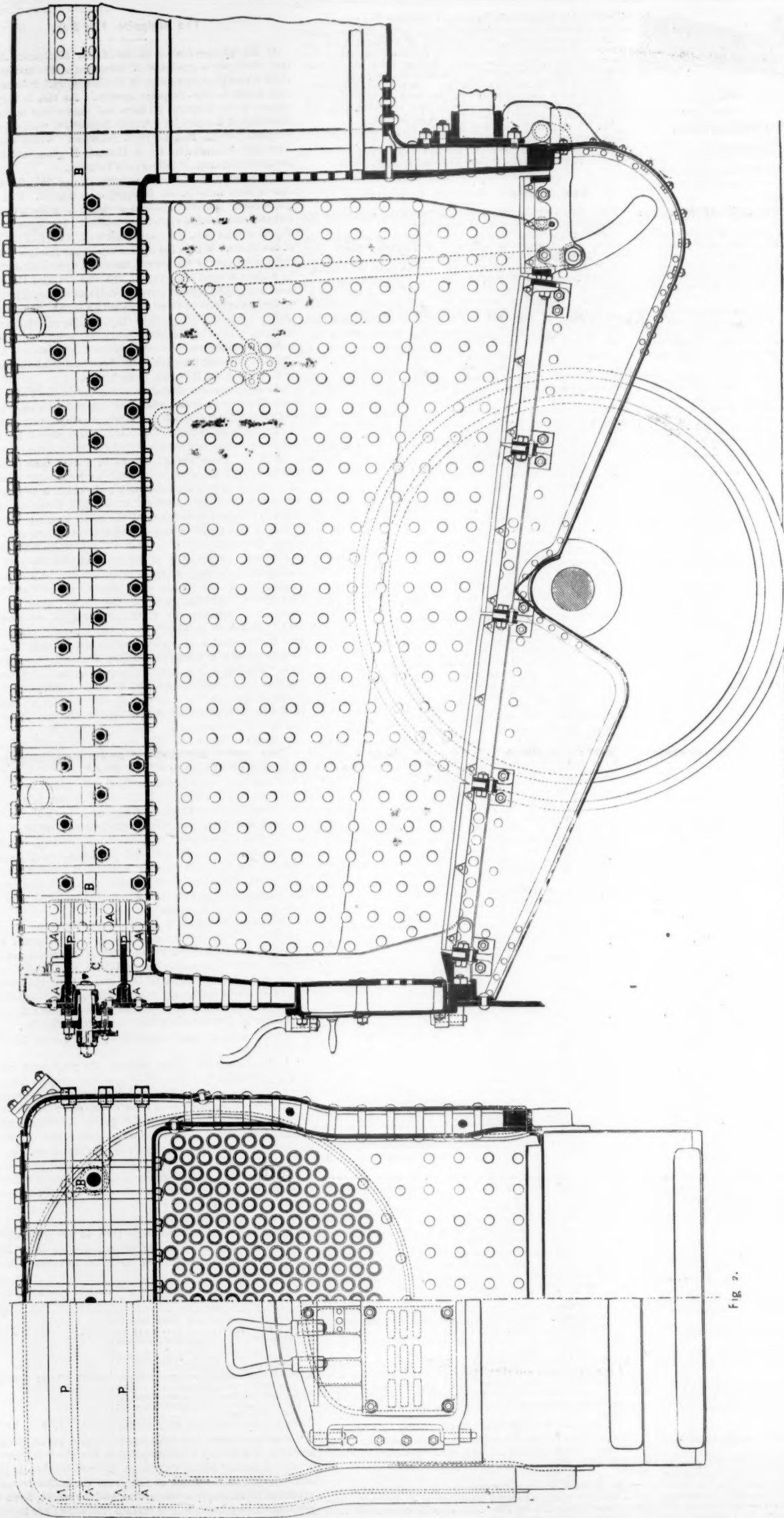


FIG. 1.

Fig. 2.

BELPAIRE FIRE-BOX FOR BELGIAN STATE RAILROADS.

Designed by Mr. A. Hubert, Engineer.

ing surface toward the walls seems to me advantageous as regards the utilization of the heat.

"The bed of fuel being thin, it should be replenished often. The furnace therefore should be supplied at short intervals and consequently be easy of access. For this reason the fire-door is placed on a level with the grate. The latter is inclined to the front quite steeply. Through the oscillation of the engine the fuel moves toward the extremity of the fire-box and burns in proportion as it approaches this extremity. Thus the conditions of combustion are very favorable. The feeding is effected near the door, which renders this operation very easy.

"To recapitulate, therefore:

"Large grate surface, about 3 to 4 square metres; bars very near together, 3 to 4 millimetres ($\frac{1}{8}$ to $\frac{1}{4}$ in.); a thin layer of coal, 10 to 12 centimetres (4 to 5 in.); grate inclined forward, and complete consumption of smoke.

"Such are the distinctive peculiarities of the locomotive fire-box at this time employed almost exclusively on the Belgian lines.

"It is worth while to observe that the large grate surface permits it to be raised; it therefore becomes possible to put an axle under it, which is of great advantage in distributing the weight. Experience has proved that grates with bars near together do not get very hot, and that, consequently, there is no inconvenience in this position of the axle.

"There is no difficulty in clearing the grate, if it is properly done. The following is the method practised:

"The coal at the further end of the fire-box is raked toward the door; the cinders are detached from the grate thus laid bare and let fall through the fire-discharge. (The fire-discharge is the last row of bars, movable about a horizontal axis (see fig. 1).

"All the coal is then pushed toward the end of the fire-box, whose front part is cleaned by removing the cinders through the door. This operation is easy to perform while running and does not often cause the pressure to fall more than one and a half atmospheres. Moreover, the layer of fuel being thin, the fire is quickly got into condition again."

THE SCRAP HEAP.

Railroad Equipment Notes.

The Mason Machine Works, at Taunton, Mass., recently shipped two double-bogie narrow-gauge engines to the Denver, South Park & Pacific road.

The Raleigh & Gaston shops, at Raleigh, N. C., are turning out three box cars a week for the road.

W. C. Allison & Sons, in Philadelphia, are at work on a large order for coal cars.

The James Car Axle Works, at Cuyahoga Falls, O., sold recently at sheriff's sale, will soon be started up by Benjamin Thompson, the purchaser.

The Norwich & Worcester shops at Norwich, Conn., have lately turned out a new train, consisting of two passenger cars and a combination baggage and smoking car. The cars are very handsomely finished.

The Wason Car and Foundry Co., at Chattanooga, Tenn., has its shops at work on a number of small orders for cars.

The Flint & Pere Marquette shops, at Saginaw, Mich., are building two new baggage cars and six caboose cars, and will soon begin work on 100 long flat cars for carrying logs.

The Alliston shops of the Boston & Albany road are building six new passenger cars. They have lately refitted a number of old cars for summer excursion business.

The Erie Car Works, at Erie, Pa., have received an order for 300 box cars for the New York & New England road.

The Lehigh Valley shops, at Easton, Pa., are to be enlarged by a new foundry and a new car shop. Work has been begun on both buildings.

Iron and Manufacturing Notes.

The new rolling mill of the Birmingham Iron Co., at Birmingham, Ala., started up June 28.

The Vulcan Iron & Nail Works, at Chattanooga, Tenn., have been closed. It is expected that they will remain idle until the sale of the property under the trust deed.

The furnace of the Steubenville (O.) Iron Co. has been leased to F. Bates, of Cleveland, O., for three years, and will be put in blast as soon as some repairs have been made.

Mt. Hickory furnace, near Sharpsville, Pa., will go into blast in a few days.

The steel works of the Lackawanna Iron & Coal Co., at Scranton, Pa., in one week recently made 2,553 tons 18 cwt. of steel ingots. This is the best week's work ever done at these works.

Norristown (Pa.) Furnace, owned by James Hooven & Sons, has gone out of blast.

Park, Long & Co., of the Vulcan Forge in Pittsburgh, have sold their tool department to the Iron City Tool Works. They make picks, sledges, vises, etc.

Alice Furnace, at Ironton, O., is being made ready to start up, and will go into blast this month.

The Lookout Rolling Mill, at Chattanooga, Tenn., is running full double turn.

The partnership heretofore existing under the name of Lyon's Asbestos Paint Co. has been dissolved. The business will be continued by Mr. H. G. Newton at No. 197 Pearl street, New York.

Prices of Rails.

Steel rails continue at \$60 to \$62.50 per ton at mill, with a moderate business. The mills are all full of orders.

Iron rails have been quiet, with light sales reported. Quotations are about \$45 per ton at mill for heavy sections.

Old iron rails are dull and uncertain at \$22.50 to \$23 per ton in Philadelphia. Some holders ask \$24, but with few or no bids.

Railroad spikes are quoted at $2\frac{3}{4}$ cents per pound, 30 days, in Pittsburgh. Fish-plates are quoted at $2\frac{1}{4}$ cents, and track-bolts $3\frac{1}{2}$ to $4\frac{1}{4}$ cents.

A Brave Engineer.

On Wednesday, June 30, as train No. 513 of the Philadelphia & Reading, Bound Brook Line, drew out of the Ninth and Green streets depot, on its way to Ocean Grove and Long Branch, it was 15 minutes behind time because of the delay by numerous excursion passengers. The train was still behind time when it came on the Bound Brook Division, and Engineer Bernard Munn, of the Central Railroad of New Jersey, determined to make up the lost time. When the train was running at full speed between Cranford and Roselle, the connecting-rod on the engineer's side of the engine broke directly across the centre between the large driving-wheels. The ends whirled with frightful rapidity with the wheels, the front section cutting like a knife through the foot-board and the hind sec-

tion breaking through the floor of the cab. Engineer Munn, without thinking of his own great danger in the cab, shut off the steam, put the air brakes on with full force, and then called to his companion to follow him on to the boiler, out of the way of the whirling pieces. The train was under control within 200 yards after shutting off steam. The broken rod was taken off, as was also the rod on the other side of the engine, and in eight minutes after the train started on its way again, running with only the piston rod and the crank to the forward wheels. Engineer Munn is but 28 years old, and lives in Elizabeth. The passengers unite in expressing their admiration of his coolness in the face of danger, and of his prompt action in averting what might have been a terrible accident.—*Easton Express*.

A Probable Fraud.

Mr. Roswell Miller, General Superintendent of the Cairo & Vincennes Railroad, sends us the following circular, dated June 24:

"Mr. A. N. Towne, General Superintendent Central Pacific Railroad, advises me that an office stamp of the General Superintendent's office of this road, has been made for unknown parties in San Francisco, who are manifestly intending to use it for fraudulent purposes. Railroad officials are therefore cautioned against requests for passes, etc., bearing such stamp, unless said requests are received by mail and require response by mail to the office of the road at Cairo, Ill. No requests for passes to be delivered to bearer should be honored, as none will be made by me."

Tramps.

John Secoy, brakeman on Cris Loser's freight, had an adventure last week which some of the boys seem to appreciate. Discovering a tramp in one of the freight cars he went to brakeman No. 2, with the request that he interview the slumbering stranger and kindly request him to choose some other means of locomotion. No. 2 demurred and suavely suggested that John, who, by his winning ways and pleasing address, had established a reputation for persuasiveness, had better do his own interviewing. John was somewhat nettled, and started for the car, with: "By George, I'll fire him out, and don't you forget it."

The following colloquy will explain itself:

Brakeman No. 2.—"Well, did you go for that fellow?"

John.—"You bet I did."

No. 2.—"So did I."

John.—"You did! what did you get?"

No. 2.—"I got a licking."

John.—"By George, so did I."

The victorious tramp was boss of that freight car, and rested in peace the balance of the way.—*Aurora (Ill.) Beacon*.

The Accident Which Killed Mr. Lincoln.

The Norwich (Conn.) *Bulletin* of July 2, gives the following account of the accident by which President D. Waldo Lincoln, of the Boston & Albany was killed:

"So many rumors have been afloat as to the cause of the sad accident on the observation train on the (New London) Northern Railroad on the day of the Yale-Harvard boat race, by which Mr. Lincoln and Mrs. Appleton lost their lives, that your correspondent yesterday took pains to learn from the officers of the road and men on and in charge of the train the precise facts of the matter, and they are produced herewith. By request of the officers of the Boston & Albany road one of their palace cars and a flat car fitted up as an observation car were placed on the observation train. They were placed on the south end of the train, which is the forward end coming down the course. The palace car was south or forward of the observation car and the end of the latter was left open to allow free passage between these cars. Two engines were used to run the train, the one on the south furnishing the motive power in going up to the stand, the other doing absolutely no work; while in coming down the one on the north end did the work while the other, or one on the south end, did nothing. In order that there might be no mistake as to the engine on the foremost end of the train being kept entirely idle, Mr. Bentley, the General Superintendent of the road, went on one of the engines (the one on the north end) while Mr. Spaulding, the General Freight Agent, was on the other. When the race was first started the train was started too, and when Yale broke its outrigger, the train stopped. Of course it had some headway, and as the engine at the north end was doing the work it shoved the cars together, the links therefore being slack and the bunters or drawbars being together. As the motive power at the north end stopped, the impetus of the cars naturally straightened out the links, and as the palace car on the south end was the heaviest, its force was not so easily checked and the link was not sufficient to hold it. At the time of the snap, caused by stopping the train, Mr. Lincoln stood on the south end of the observation car, while Mrs. Appleton sat on a box. When the check came they both pitched forward, striking against the guard railing of the palace car, and fell between the cars. Mr. Spaulding, who was on the engine, as well as the engineer and fireman, are ready to testify that that engine was not working at all, but was being moved as the cars were. The palace car was a heavy one, weighing probably 30 tons, and it acted like a weight at the end of a string which, given a motion and then suddenly stopped, is liable to break the string."

An Imposter.

The following circular has been issued by Mr. C. B. Meeker, General Passenger Agent of the New York Central & Hudson River road:

"My attention has been called to an engraved card, reading:

"F. J. Kimball,

"Trav. Agent,

"New York Central & Hudson River R. R."

"No such person is employed by this company in any capacity; and it is believed that the cards were prepared for a young man claiming to represent the firm of Moffat & Bennett, of Quincy, Ill., and Liverpool, England, purporting to be engaged in the business of forwarding emigrants. Should he present himself as an agent of this company, please treat him as an imposter."

Fast Time South.

A mile a minute was actually made last Saturday by Ed Burke with his engine No. 33 on the Cincinnati Southern. He started through with the pay car and between Chattanooga and Darwin he ran 15 miles in 17 minutes. After passing Dayton three gentlemen in the car timed the engine and it ran five miles in five minutes. This is the best time ever made on a Southern railroad and Ed Burke has the horns as the fast runner.—*Rhea Springs (Tenn.) News*, June 24.

Canal Steamboats.

The late experiments in canal steamboats bid fair to be a complete success. The Baxter steamers are not sufficiently remunerative to continue the building of that kind of boat. They do not carry a sufficient load, owing to their build, and that is made necessary by the form and arrangement of the machinery and the propelling power, the propeller being that

form used by the tug in Buffalo. The new style, which bids fair to pay handsomely, is as full at bow and stern as the ordinary first-class canal boat. The propelling power is radically different from the tug propeller. The wheel is eight feet in diameter and placed close to the stern—the boiler is upright with a single engine, very compact machinery, taking up no more room than the stable in many boats, and enabling the boat to carry 7,500 bushels of corn and coal for the trip. With this cargo they run from Buffalo to New York in seven days on $5\frac{1}{2}$ gross tons of coal, saving river and harbor towing. One returned from New York to Buffalo in one hour less than seven days, bringing 130 tons of freight. The outlook now promises to supersede mule and horse towing. The Belgian system of cable-towing will take that large number of boats now relying on the mule and deliver them promptly as consigned and in much less time and cost than can be done by the mule. Both systems are necessary for rapid movement on the canal, and to cheapen the transfer from the west to the seaboard. Steam is sure to supersede animal power on the canal, as everywhere else. The canal steamboat is at last so far perfected as to ensure a handsome profit in running them, and a large number will soon be at work on the canal. Two are to be constructed in Lockport as speedily as possible by one of our most enterprising boat-builders, and the machinery is contracted for, thus opening up a new industry for our numerous and worthy mechanics.—*Lockport (N. Y.) Journal*.

It Meant Him.

When a railroad passenger hears the whistle sounding an alarm it is his first impulse to look out of the window, but this impulse is always restrained by second thought, except in the case of green travelers. A few days ago an old man and his wife were passengers on a Lake Shore train, and as the section men were making repairs on the line in various places the whistle was sounded pretty often. The old couple were fully alive to every "toot," and each time the old man would stick his head out of the window.

"Does it mean anything, Samuel?" asked the wife every time his head came back, but it could give her no satisfactory explanations. A traveler behind them finally warned the old man that he ran a risk by sticking his head out, but at the very next toot he was at it again. He wore a plug hat which looked fully twenty years old, and its loss would be nothing great. Preparations were quietly made behind him, and everything was all ready when next the whistle sounded.

"I wonder what's on the track now?" queried the wife, as she moved around uneasily.

"I dunno," he replied, "I believe we've run over as many as a dozen men since we left Toledo."

"Do look out and see what it means," she continued. Out went his head, his face toward the engine, and a smart rap with a cane from the next window, knocked his hat off and sent it flying into a swamp. He pulled back with such a rush that he almost went over his wife into the aisle.

"Land-a-stars! but did it mean anything?" she cried, as she grasped him.

"I should think it did!" he yelled. "It meant that I was a durned old fool, and have got to go bare-headed all the rest of this summer!"

The hard-hearted conductor refused to stop the train and recover the hat, and at the end of a hot discussion the bare-headed victim brought his fist down with shivering force and exclaimed:

"Waal, now, I want you to understand that if there is any law in this land this 'ere railroad has got to move its fence-corners back. 'S'posen' them rails had given me a wipe on the jaw!"—*Detroit Free Press*.

The Man from Snag's Corners.

The officials of a Michigan railroad now being extended were waited upon the other day by a person from the pine woods and sand hills who announced himself as Mr. Snags, and who wanted to know if it could be possible that the proposed line was not to come any nearer than three miles to the hamlet named in his honor.

"Is Snag's Corners a place of much importance?" asked the President.

"Is it? Well, I should say it was! We made over a ton of maple sugar there last spring!"

"Does business flourish there?"

"Flourish! Why, business is on the gallop there every minute in the whole 24 hours. We had three false alarms of fire there in one week. How's that for a town which is to be left three miles off your railroad?"

Being asked to give the names of the business houses, he scratched his head for awhile, and then replied:

"Well, there's me, to start on. I run a big store, own eight yokes of oxen, and shall soon have a dam and saw-mill. Then there's a blacksmith shop, a postoffice, a doctor, and last week over half a dozen patent-right men passed through there. In one brief year we've increased from a squatter and two dogs to our present standing, and we'll have a lawyer there before long."

"I'm afraid we won't be able to come any nearer the Corners than the present survey," finally remarked the President.

"You won't! It can't be possible that you mean to skip a growing place like Snag's Corners!"

"I think we'll have to."

"Wouldn't come if I'd clear you out a place in the store for a ticket office?"

"I don't see how we could."

"May-be I'd subscribe \$25," continued the delegate.

"No, we cannot change."

"Can't do it nohow?"

"No."

"Very well," said Mr. Snags, as he put on his hat. "If this 'ere railroad thinks it can stunt or cripple Snags' Corners by leaving it out in the cold it has made a big mistake. Before I leave town to-day I'm going to buy a windmill and a melodeon, and your old locomotives may toot and be hanged sir—toot and be hanged!"—*Detroit Free Press*.

It Was a Fisherman.

The conductor and engineer of the night train north on the Delaware, Lackawanna & Western road, Saturday night, were the victims of a rather questionable joke. Half a mile this side of New Hartford the engineer suddenly saw a red lantern (the signal of danger) ahead, and brought the train to a sudden stop. The chap with the lantern seemed to be taking things rather leisurely for a man with bad news. Conductor Kincaid called out: "Hello, there! Hurry up! What's the matter?" The unconscious fellow replied: "Vas is das?" Thoroughly angered, the engineer chimed in: "What the devil did you stop me for? Where did you come from?" The astonished Teuton looked up smilingly and held aloft a generous string of suckers, exclaiming, "Ich habe fisch gefangen!" (I was fishing.) The old man was allowed to tramp along, and to this day does not know that the train stopped on account of the red light which he carried on his fishing excursion. Conductor Kincaid is too good-natured not to appreciate the joke. He will probably stop again, if the old fellow appears on the track, for he is a firm believer in the old railroad axiom, "In cases of uncertainty always take the safe side."—*Utica Herald*, July 5.



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EDITORIAL ANNOUNCEMENTS.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Presses.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

THE DISCOMFORTS OF SUMMER RAILROAD TRAVEL.

A very sagacious writer, who has often been quoted in these columns, has imputed to a "statesman" the following recommendation for the improvement of the administration of railroads: "Look out," he says, "for a very ingenious, sickly man, with a large family, and give him \$20,000 a year as an inspector of railways. Let him make short reports, in good English, of his sufferings on the different railways; specifying names, dates, and every particular. He must be bound to travel, occasionally, with his whole family, in the depth of winter. It is true we know all about these sufferings at present, but not sufficiently in detail."

There is, no doubt, a special class of discomforts which attend railroad travel in winter, but it is not of these that it is proposed to speak now. The imaginary inspector should be required to travel in midsummer as well as in midwinter. Although there is no reason to expect that the "statesman's" suggestion will be adopted, yet what would seem to be quite a practicable measure would be the selection of intelligent persons by the managers of railroads, to travel over their lines, unknown to the subordinate officers, and make such reports as are proposed above. Probably the manager would hear of the existence of a good many abuses and evils, of which otherwise he would remain in ignorance.

It would not be difficult, though, for any one who has traveled much in summer, even without the qualifications enumerated, to suggest various improvements and to point out some of what appear to be remediable discomforts which attend travel in summer.

There is, of course, first, and perhaps greatest of all, the heat. Then there is, secondly, the dust and cinders, and third, the first and second combined; all of which will be discussed in their order.

With reference to the heat, it would seem as if something could be done to diminish the effect of the sun's rays on the roofs of cars. As they are constructed at present they consist of rafters, or purlines, on top of which thin boards are laid, and these are usually cov-

ered with tin, painted some dark color. To the underside of the rafters, on the inside of the car, the head-lining is nailed. Latterly, in some of the better class of cars, what are called ceiling veneers are used instead of head-lining. In either case, there is a space of only a few inches in depth between the two. The consequence is that the rays of the sun "beat down" on the dark-colored tin roof, which thus becomes very much heated, and as there is little to intercept the heat it is communicated to the inside of the car. The effect is very much like that which occurs in rooms located directly under the roof of a house. On one occasion the writer was compelled to occupy as a drawing room an upper apartment with a low ceiling directly under a tin or slate roof. In summer it was so hot that only profane adjectives would adequately describe it. Fortunately for the draftsman one of the proprietors of the establishment was obliged to occupy the same room for a considerable portion of the day. In order to reduce its temperature he therefore had a covering of rough boards placed two or three feet above the roof so as to keep the rays of the sun away from the latter. The space between the two was left open so that there could be a free circulation of air through it. The effect of this was, that from being one of the hottest rooms about the place, it became one of the coolest. For cars some similar arrangement seems possible. That is, a space—of course less than two or three feet—could be left between the outer roof and the ceiling, and provision could be made to produce a circulation of air through it by the motion of the car. Openings could be made in the ceiling to communicate with this space, and if it was connected with an aperture at the end of the car, over the platform and under the extended roof, the rarification of the air at the back end, due to the motion of the train, would produce very effective exhaust ventilation from the ceiling.

With this arrangement it would be necessary always to close the front opening, and have the rear one open. This could be done by a flap valve of india rubber, leather or canvas hung so as to swing outward and cover a grate or wire screen in the opening. The inward pressure in front would keep the valve at that end closed, and the one at the back end would be opened by the outward pressure. The details any intelligent car-builder could work out. The effect of such an arrangement would be very much the same as was that of the covering of the roof of the office referred to.

But it may be said that the heat of summer travel is much more tolerable than the dust and cinders. It is these latter, combined with the perspiration induced by the heat, which gradually covers the exposed skin of the unhappy passenger with a sort of viscid paste, which makes a negative answer to the question "is life worth living" quite foregone. Now what can be done about dust? Of course, for its prevention, or its very material diminution, there is but one sure and obvious means, and that is stone ballast. But this is not always permissible on account of cost, and may be for other reasons. Twenty or twenty-five years ago there was a vast host of inventions and devices for excluding dust by sifting and filtering the air, and cars were built which required a man to be a hydraulic engineer to manage properly. Of these devices it may be said generally, that they have passed away as utterly as the seventeen year locusts do, although a crop of these insects and of that class of inventions reappears at similar intervals. Generally, though, it may be said that little or no relief from the evil of dust is to be expected from devices of this kind. The results which they accomplish are not worth the trouble and expense involved. In other words, they cost more than they come to. On very dusty roads the only practicable means of mitigating the evil seem to be, first, the admission of air from some point where the least amount of dust will enter; second, provision for excluding it when the windows are open; and, third, adequate facilities for ablution in the car.

With reference to the first it may be said that it involves the whole question, or at least all the difficulty that there is in ventilating cars. It is curious, too, how singularly the essential point about car ventilation has been misapprehended. The efforts of inventors and car-builders have been directed chiefly to providing means of allowing the air to escape from cars, about which there is no difficulty, and have generally neglected to provide means for its admission.

Of the latter it may be said that the place in a railroad car which is freest from both dust from the road-bed, and cinders and smoke from the locomotive, is at the frieze; that is, on the sides just below the eaves of the roof and at the corresponding position at the ends, but under the projecting roof above the platform. Of course the higher up the opening the less liability there

is of encountering the dust from the road-bed, but the roof is exposed to the smoke and cinders from the locomotive. Therefore the frieze is the point where there is least dust and is also but little exposed to smoke. At the end of the car the frieze is also protected from the latter by the projecting roof. Besides this, an opening for the admission of air at this point has the advantage, if it is in the front end, that the motion of the car produces an induced inward current, which is not the case on the sides. Mr. Creamer, of New York, who has been the great advocate of the plan of placing the supply openings on the sides, uses powerful exhaust ventilators in the clear-story. These, as it were, suck the air into the car through the supply openings in the frieze. The arrangement for the admission of air at the end of the car, however, seems to be preferable to this, for the reasons which have already been stated. It is essential, though, that they should be placed as high up as possible, so as to be far from the dust which rises from the road, and of course the closer they are to the under side of the projecting roof the more will the latter protect the openings from smoke and cinders.

It makes very little difference, though, how the openings for the admission of air are arranged, if the dust enters the cars through open windows. Considering the comfort which results from the use of dust deflectors, it is astonishing that they have not come into more general use. These, as most travelers on railroads in this country know, consist simply of a board placed vertically under the window sash, when it is up, and on the front side of the window opening. It projects out at right angles from the side of the car, and the effect is to produce an outward current of air from the window. It also deflects the cinders and thus in a great measure excludes both from the car when the window is open. These deflectors are seldom found anywhere excepting on sleeping and drawing-room cars, and not always there, and are generally of a portable and temporary character. It would seem as if there was a very good opportunity for some ingenious inventor to devise an arrangement of this kind which would be permanently attached to the car, and which could be folded either inward or outward when the window was closed.

The Committee on the Prevention of Smoke in their report to the Master Mechanics' Association at the late meeting recommended "locomotive boilers of the largest possible capacity; careful firing and the admission of air above the fire" as the most practicable means known for diminishing smoke. There may be others which are equally or more available, but they are not now definitely known to be so.

At best, then, the evils complained of can only be mitigated. On a dusty road there will be dust, and for the present at least the science and art of mechanical engineering have not provided any practicable means of entirely preventing smoke and cinders. This being the case, and as the evil cannot be prevented, the next thing to do is to provide a specific. Happily there is one which is obtainable anywhere, at little or no cost, and it can be taken as often as desirable without injurious effects. We refer to cold water. In other words, adequate provision for frequent ablution is perhaps the best remedy for the evil referred to, that is known. In sleeping and drawing-room cars this is always provided, but it would seem as though it could be supplied at so little cost that it should be found on all first-class passenger cars.

The discomfort of car seats is a subject complained of not only in warm weather, but is much greater then, on account of the heating effect of personal contact with red plush, with which such seats are usually covered. The agreeable sensation which one enjoys in warm weather in occupying the cane or rattan seats of the New York Elevated railroads suggests their general adoption on all roads in summer. The use of such seats is universal in tropical countries. Why would it not be possible to devise a seat the cushion and back of which would be removable in summer, and which could be replaced with some kind of cane fabric?

Another evil with car seats is, that they are always made too narrow. They are seldom more than 15 or 16 inches wide, measured from the front to the back. To be comfortable they should be at least 18 or 20. It is singular, too, how some errors acquire general acceptance. Among them is the prevailing one among upholsterers that a seat should be made convex in form. The delusion is apparently a modern one, and came in with upholstered furniture. Our grandfathers knew much better when they smoked their pipes at ease in their old leather and splint-bottom chairs. In the old stage coaches, too, the seats were inclined backward, so that there was little trouble in remaining in them, even on a rough road. The Pullman Car Company in building the cars for the Metropolitan Elevated road in New York,

recognized the comfort of this old arrangement, and the seats have all been made with a backward inclination.

It is amazing, too, what ingenuity and expense have been expended in some cases to make drawing-room cars uncomfortable. The seats and windows, in many cases, seem to be arranged without any reference to seeing out of the latter. In some of the Wagner cars, with large plate-glass windows, every alternate seat is located so that a passenger must ride backward to see out, otherwise he is confronted with a blank panel. Generally the comfort of the chairs provided in such cars is entirely disproportionate to their cost, and to the space they occupy. The occupants are in disagreeable proximity to each other, and there is less seclusion than when each seat is separated from that next to it, as in ordinary cars. With a given amount of money it would seem to be possible to secure a much larger amount of comfort for the same number of people if the car was made with seats of the ordinary plan, but improved in various particulars as has been suggested. The following are offered as general specifications for such a car:

It is to be made with an ante-room or vestibule with a lavatory at each end, one of them for ladies and the other for gentlemen. Next to each of these let there be a state-room for parties desiring seclusion, and with a lounge for people who may be ill. Between the state-rooms arrange the seats on the plan used in ordinary passenger cars, that is, with reversible backs, but place them from 38 to 40 in. apart, measured from centre to centre, lengthwise of the car. Make the seats 20 in. wide, with a back high enough to reach to the shoulders of a grown person. Use a seat which may be inclined backward, whichever way the car runs. Improve the form of the seat arms, and give adequate and comfortable arm and foot rests. The cushions and upholstered backs to be removable and exchangeable in summer for those made of cane. One window to be provided for each seat, as usual, and to be made as low as is consistent with a comfortable arm-rest, and as wide as possible, and yet leave room for a head-rest on the side. All the mouldings about the windows and the seat arms and backs to be rounded off so as to be agreeable to the hand or touch. Dust deflectors to be attached at each window, and the sashes of the latter to be provided with means of holding them up in any desired position. As little upholstery to be used as possible, its only object, when used, being that of increasing the comfort of passengers. No textile fabrics whatever to be used for merely decorative purposes. All the "finish" of the car to be designed with reference to the facility of keeping it clean. The ventilation to conform to the plans suggested. The seats all to be numbered in some conspicuous way, and tickets for each to be sold at the same price whether occupied by one or two persons. The objects to be chiefly kept in view, in the design and construction, to be, first, safety, the appliances for which have not been specified; second, comfort; third, cleanliness; and fourth, cheapness. As such a car could seat nearly twice as many people as one of the ordinary drawing-room pattern does, it is plain that for two persons occupying one seat, the charge for each need be only half as much as at present. The features to be avoided should be, first, ostentatious display; second, impure air; and third, propinquity with disagreeable passengers.

But this article must end, not because there are no more evils and discomforts to be enumerated, but because there is not room to describe either them or their remedy, which we may attempt to do at some future time.

CARRIAGE OF ANIMALS.

The peculiar questions incident to the carriage of live-stock have received elucidation in several decisions of the courts rendered during a year or two past. One of these, the case of *Maslin v. Baltimore & Ohio R. R. Co.* (14 W. Va. Rep., 180), deserves examination by counsel to companies, and for its breadth of view and elaborate collation of authorities may well be deemed a "leading case" on the subject. The question has long been recognized as a perplexing one how far the carrier is chargeable with risks and injuries incident to transportation of animals as animals; those, for instance, which result from hunger and thirst; from fatigue, sweating or sickness; or from the unruly temper, affright or misbehavior so to speak, of the beasts themselves. It has been claimed that all these perils are plainly cast upon the carriers by the old-fashioned authorities in English law, which use the language that common carriers are liable for all losses except those arising from the "act of God or the King's enemies." On the other hand it is contended that this language was framed when extended trans-

portation of live animals in droves and herds, such as is now an important branch of daily traffic, was unknown, and that the old statements of the rule are inappropriate to the new line of business; that the doctrine ought to be restated with exceptions in favor of the companies, adapted to the growth and expansion of modern trade. And such is the tone of the decision in the *Maslin* case. The general result reached is that, irrespective of any limitations of liability in the contract or receipt, the company is not liable for death or depreciation of live-stock by such causes as heat of weather, unless the loss is attributable to the negligence of the persons in charge of the train and yards.

The circumstances were that *Maslin*, at New Creek in West Virginia, intrusted to the company thirty-six head of fat cattle, in good condition for transportation to Baltimore, to be there sold in market. During the journey they suffered greatly from heat; two died, and the others were seriously injured. Their owner sued for damages, framing his suit in a way to recover on either of two grounds: 1. If the court should decide that a railroad company is an insurer of live-stock against hot weather, and hence liable irrespective of neglect; or, 2, if plaintiff should be able to prove special charges of neglect and misconduct of the train-men, in omitting to water the beasts at proper times. The company seems not to have seriously disputed that the train-men were somewhat in fault, but said that the shipper had agreed by the railroad receipt to bear any risk of injuries by negligence of agents.

The Court held upon the question first presented that railroad companies are common carriers, equally whether live-stock or dead merchandise is in question. They hold themselves out as carriers of all sorts of property, including cattle. But the common-law liability of a carrier was always understood to be subject to an implied exception of losses arising from the inherent nature of the thing. If milk is sent by cars and it sours on the way; or cider, and it turns to vinegar and spoils; if barrels leak, or boxes are insufficient to protect their contents; fruit rots or flowers wilt, the loss does not devolve on the carrier, because it is attributable to the inherent qualities of the article. And this principle is fully applicable to animals. If the loss arises from their vitality, as where vicious and unruly animals injure or destroy themselves, or each other, or starve themselves by refusing food, or die of fright or heat, the company is not liable, provided its employes have used foresight, diligence and care to avoid such damage. It does not matter whether the injury comes from the susceptibility of the creature as a live organization to injurious influences, or from its viciousness, or its unruly temper; in either case the company is not chargeable, if proper care has been taken.

But the duty of taking proper care cannot, so the Court considered, be thrown off, by an agreement that the owner of the herd shall bear that risk. It would be unreasonable and against public policy for a carrier to be allowed to take a contract exempting him from consequences of his own negligence, or, what is the same thing, for a railroad company to stipulate not to be responsible for neglect of duty by its employes. If, therefore, the owner of live-stock can prove that prudent feeding, watering, rest and shelter for his animals was neglected on the trip, he can hold the company (by West Virginia law), notwithstanding the receipt which he holds may declare to the contrary.

This branch of the opinion is the more noteworthy because there was an early decision by the same Court, made not long after the state was created, sustaining these stipulations not to be liable for negligence (*Balt. & O. R. R. Co. v. Rathbone*, 1 W. Va. Rep. 87.) That decision has been widely quoted; but the Court now pronounces it erroneous; says that it was rendered during the war, when few authorities were accessible, and under very disadvantageous circumstances, and retracts it. The *Railroad Gazette*, in a recent article, called attention to the former position of West Virginia upon this subject as being somewhat exceptional; this recent decision harmonizes the law of that state with the general course of decision elsewhere in the country.

A recent case in Wisconsin involving different circumstances has elicited substantially the same views. Mules were sent by rail from Shelbyville to St. Louis. The engagement was that the owner should accompany the train and attend to feeding and watering; and that the company should not be liable for any losses, unless attributable to its negligence. The train-men did not neglect the mules particularly; they took no charge or care of them; but when the train reached a way station at which it was necessary to wait for another train, there was a long delay. The owner of the mules, finding they would suffer, asked to have the cars in which they were, drawn to certain

stock-pens convenient to the station, where he might unload and feed and water the animals. The train-men would not do this; and at the spot where the cars were left standing it was not practicable for the owner to take proper care of them. They stood, in freezing cold weather, nearly twenty-four hours, and were much injured. The Court said that although the delay at the way station might have been unavoidable and the owner the responsible person to feed and water the animals, yet it was a part of the company's engagement to have proper machinery and appliances in readiness and afford proper facilities for unloading stock to be watered and fed at points in the transportation where to do so became necessary.

A converse case to this occurred in Iowa, where fault was found with the company for not delaying a train to take on board a drove of hogs. The hogs were at a way station awaiting a train to take them; they had not, however, been delivered to the company's agent, but were in a private stock-yard and in charge of an agent of the owner. The owner arrived by the very train in which he expected to send them forward, and desired that the train should delay until they could be taken on board. The conductor refused to wait; and the Court said that he was not bound to wait, and the company was not chargeable with any loss through the delay. If a train could be stopped at way stations along its journey at the demand of any person wishing to put droves of beasts on board, there was no knowing when it might reach its destination. The owner should have made arrangements beforehand to have the animals loaded in a car and ready for the start.

There was a case in Wisconsin where the injury to the animals was not in any way attributable to their vitality or peculiarities. A wheel broke, and a car containing three horses was thrown off the track. The plaintiff charged negligence, and the company defended on the ground that the receipt given for the horses contained the letters "O. R.," which, they said, meant that the animals were carried "at the owner's risk." The plaintiff swore that he never saw these letters until the suit came to be tried. But the Court said he was bound to know the contents of a receipt given and taken as containing the terms of the agreement to carry; he ought to have examined it when he received it. The decision therefore was that he could not recover unless he could prove some specific fault or neglect against the company which caused the breaking of the wheel. He could not do this, and the company won.

There is one element in these cases which distinguishes them from those in which dead freight is involved, and that is the suffering of sentient creatures. The question does not lie wholly between owner and carrier; government may well decline, on grounds of public policy, to sanction arrangements which these two might be disposed to make, if they will diminish the precautions and care which would otherwise be taken. Early English law took little note of sufferings of brute creatures. If injuries done to an animal which belonged to another man diminished its value as property, or if the circumstances were such that the cruel acts tended to shock or demoralize those who witnessed them, the law would give redress or punishment. But there was no distinct recognition of animals as entitled to protection. Modern and more humane views take this somewhat into account. It is understood to be the motive underlying the familiar acts of Congress punishing wanton neglect of live animals on railroad journeys, for the penalty is imposed on owner and company alike; and ownership, or consent of owner, is no excuse. On like principles the courts may well strike out of carrying contracts any stipulations which would tend to relax care and probability of kindly treatment. The labors of the societies against cruelty to secure improved methods of live-stock transportation, both by appeal for more stringent laws and by the wide-spread offer of a prize for an improved cattle-car, are well known, and have been influential. The course of thought in the courts is steadily toward the principle that the animals themselves, as well as owners and purchasers, are entitled to have their journeys divested as far as practicable of causes of suffering or disease.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Shenandoah Valley.—Track laid from Hagerstown, Md., south to St. James College, 6 miles.

Walla Walla & Columbia River.—This road has been extended from Walla Walla, Wash. Ter., to Blue Mountain, 19 miles.

Montour.—Extended from Ewing's Mills, Pa., to Jeffreystown, 9 miles.

Detroit, Lansing & Northern.—The track of the *Stanton*

Branch is extended north by west to Big Rapids, Mich., 18 miles.

Chicago & Northwestern.—This company's Toledo & Northwestern Division has been extended from Garvin, Ia., to Gladbrook, 7 miles. The Chicago & Dakota line is extended from Volga, Dak., west to De Smet, 32 miles. The Galena & Wisconsin line is extended from McCormick, Wis., to Montfort, 23 miles.

Atchison, Topeka & Santa Fe.—The Marion & McPherson Branch is extended from McPherson Centre, Kan., west to Lyons, 31 miles. The Cowley, Sumner & Ft. Smith Branch is extended from Wellington, Kan., southwest to Caldwell, 22 miles.

Texas & St. Louis.—Extended from Pittsburgh, Tex., west by south to Big Sandy, 32½ miles. Gauge, 3 feet.

Chicago, Burlington & Quincy.—A branch has been completed from Hastings, Ia., to Clayton City, 17 miles.

Utah Southern Extension.—Extended from Milford, Utah, southwest to Frisco, 15 miles.

Central of New Jersey.—The New York & Long Branch Extension is completed from Sea Girt, N. J., to Point Pleasant, 2½ miles.

Illinois Central.—The Pontiac Branch of the Middle Division is extended from Pontiac, Ill., west to near Minonk, 16 miles.

Denver & Rio Grande.—Extended from Turkey Creek, Col., northwest to Leadville, 41 miles. Gauge, 3 feet.

This is a total of 291 miles of new railroad, making 2,190 miles thus far this year, against 1,008 miles reported at the same time in 1879, 691 miles in 1878, 689 miles in 1877, 740 miles in 1876, 426 miles in 1875, 690 miles in 1874, and 1,518 miles in 1873.

LAKE-AND-RAIL SHIPMENTS became the subject of a controversy among the trunk lines by reason of the action of the Baltimore & Ohio some time ago in making a Chicago-Baltimore rate via Sandusky equal to the lake-and-rail Chicago-Baltimore rate via Buffalo or Erie, and pro-rating with the vessels, so that its share of the rates for the haul from Sandusky to Baltimore was very much less—about one-third, we believe—than the Sandusky Baltimore regular rail rate. The regulation governing the old lake-and-rail lines via Buffalo and Erie is that the railroad's share of the rate must not be less than its proportion of the through rail rate for the same distance. But if this were applied to Sandusky, or other ports as far west, it would leave no inducement for vessels to bring cargoes to that port. Moreover, the rail haul is very much longer from Sandusky than from Buffalo. But Sandusky is the easternmost lake port reached by the Baltimore & Ohio, and when rail rates are well maintained, so that the lake rate is materially less than the rail rate, that road is at a considerable disadvantage, as the other roads can all take advantage of the propeller lines running from Buffalo and Erie when their rail connections cannot afford to bring them grain. When the matter came up at a meeting of the Joint Executive Committee recently, it was referred to the trunk-line presidents. These having been unable to agree, it has been brought before the Board of Arbitrators for them to settle. If Sandusky were the only port by which lake-and-rail shipments could be made west of Erie, perhaps the matter could be easily settled, or at least would have slight importance; but the Lake Shore can receive grain at Detroit, Toledo or Cleveland, the Great Western at Sarnia or Detroit, the Canada Southern at St. Clair or Amherstburg. If a route is established via Sandusky, it is hard to see what can prevent the establishment of others by way of ports still further west and in which the rail portion will be a still larger proportion of the whole line.

THE PETROLEUM EXPORTS, which up to June were materially larger this year than ever before, fell off greatly in June, so much so that for the first half of the year they are a trifle less than last year, and less too than in 1877. For the first five months of the year the average monthly exports were about 25,000,000 gallons this year against less than 23,000,000 last year; but in June the exports were but 19,700,000 gallons this year, against 31,350,000 last year. New York, however, has gained greatly, and has exported 79 per cent. of the whole this year, against 70 per cent. last year. But Philadelphia's exports are 15 per cent. and Baltimore's 45 per cent. less than last year. The total exports have been, in gallons, for the half year:

Year.	Gallons.	Year.	Gallons.
1873.....	100,007,683	1877.....	144,305,340
1874.....	100,588,285	1878.....	115,210,360
1875.....	98,508,424	1879.....	145,055,228
1876.....	101,389,183	1880.....	144,108,350

The causes of the slackening of exports we do not see mentioned. Prices are low, and the demand can hardly be limited on that account; the production at the wells in May and April was much larger than last year (4,102,921 barrels against 3,175,372); but the shipments from the oil regions were much less (1,937,527 barrels against 2,467,657). The stock on hand at the tanks in the oil regions is more than one-half greater at the end of May this year than last, so that it appears that producers are holding, probably in anticipation of better prices. It may be remarked that for some time past the carriers have got so little profit from the transportation of oil from the wells to the refining centres and to the seaboard that they seem to have lost their interest in the business, apparently considering it as one that is not likely to be of much value to them hereafter. It is different with the distribution of refined oil for domestic consumption, but that is a traffic which generally takes pretty good care of itself.

NEW ISSUES OF RAILROAD BONDS have been so widely advertised for a few weeks past as to remind one of the days

previous to the panic of 1873. But a little comparison will show one very great distinction. The bonds now offered, with very few exceptions, are secured by railroads already constructed, and generally are issued or guaranteed by old railroad companies whose financial standing is well known. Thus the Union Pacific offers its 6 per cent. bonds secured by a deposit of the 7 per cent. bonds issued by the corporations, which have built branches for it, such as the Colorado Central, the Utah & Northern, etc. The Chicago, Milwaukee & St. Paul issues bonds on the recently acquired Chicago & Pacific road, 90 miles being completed and half as much more under construction. The Nevada Central, which built its road last year, now for the first time offers its bonds on the market. Notwithstanding the prevailing feeling of confidence in a prosperous future for the country, investors seem still to remember the fate of the great host of new railroads in 1873 and after, and to require some tangible, completed property, if not a record of operation showing profits enough to cover fixed charges, before they will pay any attention to new securities, unless they are issued or guaranteed by some old corporations whose credit has been tried. It is of course true that an experienced corporation with money to lose is much less likely to spend money for an unprofitable railroad than a new one without experience, whose promoters may make something by the construction of the road, but will probably not lose anything if it fails to earn interest on its cost. Still it is very easy to go too fast in such matters; and investors would do well to scrutinize every issue offered them with great care. It will be very easy for us to build too much railroad in these days; money is easy to get, and the cost of construction since iron went down is quite moderate.

WESTERN RAILROADS have been taking the lead in some innovations in passenger traffic which seem to be very popular. One of them is the introduction of what are called "reclining-chair" seats, which have backs high enough to support the head and are adjustable at different angles, so that the occupant may change his position several times without leaving his chair, and can take a nap in it quite comfortably—a very great relief in a long journey, whether by night or by day. Several roads run cars supplied with these chairs on through trains over long distances without any extra charge. Another innovation is the supplying of meals in hotel cars at a fixed price. The average traveler, it may be said, does not know how to eat at a restaurant economically, and prefers a full dinner selected for him at a known and limited rate. Many of the roads from Chicago westward attach a dining car during a part of their run and charge 75 cents for dinner, passengers from all other cars in the train coming into it to eat at their leisure, precisely as they would into the railroad eating-houses. In all cases, so far as we know, the dining cars in which a fixed price per meal is charged belong to the railroad company, and not to any sleeping-car company. The provision made by the Pullman Company (generally of superior quality, as is custom of this company) is a true restaurant, which usually suits people of fastidious tastes better, but probably not the average traveler. The Michigan Central is, we believe, as far east as these dining cars have yet reached. That they are popular may be inferred from the fact that their use is extending.

CHICAGO SHIPMENTS EASTWARD are to be reapportioned, in order to provide for the Grand Trunk, which has been taking freight from Chicago now for some months by its own road, which, until last month, was not a member of the Joint Executive Committee, and was not bound as the other Chicago roads were to maintain rates. When it made application to be admitted to the Chicago pool, as our readers know, in accordance with the rules of the Joint Executive Committee, the apportionment of the traffic was first left to the roads concerned—that is, the roads that carry to the East from Chicago. As usual, these parties could not agree. The report is that the Grand Trunk first claimed 20 per cent. of the Chicago shipments, and afterward intimated that it would accept 15; but the other roads are said to have named 7 per cent. as the largest amount they were willing to allow it. Being unable to agree (as was expected), the apportionment was left to the Board of Arbitrators, whose award all the roads concerned have agreed to accept. It is expected that this award will be made at a meeting to be held in Saratoga, July 20. There is not the slightest anticipation of trouble on this score. Every company, of course, desires to have its share as large as possible, and makes its claims accordingly; but having presented its claims and the arguments supporting them, every company is also willing to abide by the decision of the arbitrators. No award of traffic made by just and well-meaning men could be half so disastrous to any company as a breaking up of the agreement, and all parties now seem pretty thoroughly convinced of this.

CROP PROSPECTS at this season become decidedly interesting to nearly the whole community, as the condition of business for the coming year depends very largely upon the results of the harvest. Winter wheat has been harvested in that part of the country which produces most of it, and is generally reported a larger crop of somewhat inferior quality to the immense and fine crop of last year. Eastern Kansas is said to have something like an average crop, Western Kansas a very small one. The reports from Minnesota, both southern and northern, indicate a fair crop, but at this time last year the promise was even better, and after all there was much less than an average crop. An average crop in Minnesota and Dakota this year means an immense surplus for export and a very heavy traffic for such roads as the Chicago & Northwestern, the Chicago, Milwaukee & St.

Paul and the St. Paul & Sioux City. In Wisconsin wheat is said to promise more than an average yield, in Iowa fully an average. Corn in most of the great corn-growing districts, including Kansas, is in exceptionally good condition. Should no misfortunes occur later, there is a prospect that the grain production will be larger even than the enormous one of last year. The average yield of spring wheat may be considerably greater, and the area sown is very greatly increased.

THE COTTON CROP promises exceptionally favorable results. The *Commercial & Financial Chronicle*, the very best authority on this subject, has collated all the information received down to the end of June, which shows that there is a material increase in the acreage planted this year, estimated by that journal to be in the aggregate 9.51 per cent. more than last year, while the average condition is reported to be 99, as against 96 last year. South Carolina and Texas report the best average condition of the crop for nine years—the former 104 and the latter 106, against 94 each last year. Moreover, the planters have been richer this year, have used more fertilizers, and are better supplied with animals and tools needed for working the crop. This crop is a delicate one, and bad weather or insects in July or August may yet make sad havoc with the crop. But the present prospect indicates that the crop will be the largest ever grown.

WATER RATES are about as follows: By lake from Chicago to Buffalo, 5½ cents a bushel for corn and 6 for wheat—a considerable reduction from rates that prevailed the last half of June. By canal from Buffalo to New York the rates are 6 cents for corn and 6½ for wheat, which is half a cent lower than the rates that prevailed in the last half of June. Grain from New York to Liverpool was contracted last Tuesday at 6d. per bushel by steam.

THE METRIC SYSTEM on the 15th of July becomes obligatory in the kingdom of Spain and all its colonies, including Cuba, with which our commercial relations are very intimate. The Turkish government has also ordered the introduction of this system into all its provinces, including Tripoli and Arabia. The cubit gives way to the metre in Jerusalem, and the shekel to the kilogram.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Dividends.

Dividends have been declared as follows: Central Pacific, 3 per cent., semi-annual, payable Aug. 1. Winchester & Potomac (leased to Baltimore & Ohio), 3 per cent., semi-annual, payable July 1. Housatonic, 2 per cent., quarterly, on the preferred stock, payable July 15.

Meetings.

Meetings will be held as follows: Boston & Albany, special meeting, at the passenger station in Boston, July 15, at 11 a. m., to elect two directors to fill the vacancies made by the death of D. Waldo Lincoln and the resignation of Chester W. Chapin. Wabash, St. Louis & Pacific, special meeting, at the office in St. Louis, July 14.

Foreclosure Sales.

A dispatch from Springfield, Ill., says that the Grayville & Mattoon road has been sold under order of the United States Circuit Court, and bought by Mr. Cummings, of Chicago, for \$600,000. The road extends from Parkersburg, Ill., to Mattoon, 71 miles, and had a bonded debt of \$750,000. The purchase, as indicated by the dispatch, is in the interest of the Peoria, Decatur & Evansville Company.

ELECTIONS AND APPOINTMENTS.

Atlantic & Great Western Mutual Benefit Association.—At the annual meeting in Warren, O., June 30, the following officers were chosen: President, J. S. Shaw, Jamestown, N. Y.; Vice-President, J. W. Holmes, Galion, O.; Secretary and Treasurer, G. E. Hines, Kent, O.

Boston & Albany.—At a meeting held in Springfield, July 6, the board unanimously elected Chester W. Chapin President, to fill the vacancy caused by the death of President D. Waldo Lincoln. Mr. Chapin declined, and also presented his resignation as a director. The board thereupon chose John Cummings, of Boston, President pro tem., and called a special meeting of the stockholders to fill the two vacancies in the board. It is understood that William Bliss, the General Manager, will be one of the new directors, and that he will probably be made President.

Chicago, Burlington & Quincy.—Mr. Edward E. Pratt, is appointed Assistant Treasurer in place of John N. Denison, resigned. Mr. Pratt has been Chief Clerk of the United States Sub-Treasury in Boston.

Cincinnati, Hamilton & Dayton.—Mr. A. Gregg has been appointed Master of Transportation and Superintendent of Telegraph, in place of D. E. Sheehan, resigned.

Mr. A. W. Salter has been appointed General Road-Master of this road and its leased lines.

Cincinnati Northern.—At a recent meeting the following directors were chosen: Ozro J. Dodds, George Hafer, M. S. Forbes, Charles Kahn, Jr., John Ryan, J. L. Koch, Cincinnati; Gov. Charles Foster, C. F. Brice, Lima, O.; Samuel Thomas, Columbus, O. The board elected Samuel Thomas President; J. L. Koch, Vice-President; M. V. McCracken, Secretary; George Hafer, Treasurer.

Dallas & Wichita.—This road has been turned over to Texas & Pacific. It will be under the immediate charge of E. E. Fosdick, General Agent.

Detroit, Grand Haven & Milwaukee.—Mr. W. H. Firth has been appointed General Passenger and Ticket Agent, in place of J. F. McClure, resigned. Mr. Firth was recently Western Passenger Agent of the Great Western road.

Ft. Wayne & Jackson.—Mr. W. B. Beamer, Master of Transportation, having tendered his resignation, to take effect June 26, the office of Master of Transportation is aban-

ished from that date, and all communications relative to the train or car service of the road will be addressed to M. D. Woodford, General Superintendent, at Jackson, Michigan.

Grand Junction.—This company has chosen Thomas Kelso President; E. O. Bickford, Managing Director.

Herkimer, Newport & Poland.—This company has been organized with the following directors: A. Brayton, Robert Webster, Poland, N. Y.; S. R. Millington, Warren, N. Y.; H. G. Burlingame, H. W. Dexter, Newell Morey, Newport, N. Y.; Edward M. Burns, W. W. Mosher, G. H. Thomas, Middleville, N. Y.; Warren Miller, Wm. Smith, J. W. Vrooman, Herkimer, N. Y.; Thomas W. Spencer, Utica, N. Y. The board elected Thomas W. Spencer, President; S. R. Millington, Vice-President; George H. Thomas, Secretary and Treasurer.

Indianapolis, Decatur & Springfield.—Mr. D. T. Nutter has been appointed Traffic Manager. He was formerly New York Agent of the Erie & Milwaukee Line, and has recently been in Boston.

Lake Erie & Western.—Mr. D. S. Hill, late Superintendent Western Division, is transferred to the Eastern Division, in place of Mr. G. K. Hadley, who has gone to the Ohio Central. Mr. M. Clark (formerly on the Illinois Central) succeeds Mr. Hill as Superintendent of the Western Division.

Long Island.—Mr. E. N. Robinson has been appointed Superintendent of Telegraph by the Western Union Company, and placed in charge of all the telegraph lines on the Long Island Railroad, its branches and leased lines.

Monarch Pass, Gunnison & Dolores.—The officers of this company are: President, A. B. Steinberger; Vice-President, R. McGraham; Secretary and Treasurer, George W. Gilbert; Chief Engineer, George H. Hurlburt. Offices at Arborville, Chaffee County, Colorado.

Morris & Essex.—At the annual meeting in Hoboken, N. J., July 7, the following directors were chosen: George Bliss, Benjamin G. Clarke, Wm. E. Dodge, S. Griffith, Wm. Walter Phelps, Percy R. Pyne, Moses Taylor Pyne, Andrew Reasoner, A. Robertson, W. W. Shippen, Samuel Sloan, Moses Taylor, Beach Vanderpool. The board re-elected Samuel Sloan President. The road is leased to the Delaware, Lackawanna & Western.

Ohio Central.—Mr. G. G. Hadley has been appointed Superintendent. He was recently on the Lake Erie & Western road.

St. Johnsbury & Lake Champlain.—The officers of this company (successor to the Portland & Ogdensburg, Vermont Division) are as follows: President, Horace Fairbanks; Clerk, A. W. Hastings; Treasurer, Wm. P. Fairbanks; Executive Committee, Horace Fairbanks, Franklin Fairbanks, Bradley Barlow.

The officers of the road are: Superintendent, A. B. Jewett; Cashier, A. W. Hastings; General Freight and Passenger Agent, C. H. Stevens; Engineer and Superintendent of Track and Bridges, J. R. Rust; Master Mechanic, George E. Howe. Messrs. Jewett and Hastings were recently Receivers of the road.

St. Paul, Minneapolis & Manitoba.—Mr. N. D. Miller has been appointed Superintendent of Track, Bridges and Buildings.

Mr. W. H. Landis has been appointed Traveling Auditor, in place of H. A. Willis, resigned. Both officers have been a long time connected with the road.

Terre Haute & Indianapolis.—Mr. J. R. Kendall is appointed Assistant General Freight Agent of the Terre Haute & Logansport Division, with office in Terre Haute, Ind., to date from July 1.

Toledo, Delphos & Burlington.—The following appointments (chiefly reappointments) are announced for the consolidated road: Superintendent and General Freight Agent, I. H. Burgoon, Delphos, O.; Mr. Burgoon will also have special charge of the Toledo Division, including the former Toledo, Delphos & Burlington road; General Ticket Agent, G. G. Grund, Delphos, O.; Auditor, J. W. McElwaine, Delphos, O.; Superintendent Dayton Division, J. O. Arnold, Dayton, O. The Dayton Division includes the former Dayton, Covington & Toledo road.

Tunnel Railroad Co.—The directors of this new company are: Wm. M. Force, L. C. Fowler, Frederick B. Jennings, Charles B. Lincoln, James L. Marvin, George P. Metcalfe, Henry S. White. It is apparently a reorganization of the Hudson Tunnel Railroad.

Union Railway of Indianapolis.—Mr. Daniel Whitcomb has been appointed Superintendent, in place of A. A. Hardy, resigned. Mr. Whitcomb was formerly Superintendent of the Elizabethtown & Paducah road.

Vermont Valley.—At the annual meeting in Brattleboro, recently, the following directors were chosen: John B. Page, Rutland, Vt.; Frederick Billings, Woodstock, Vt.; J. H. Williams, Bellows Falls, Vt.; W. H. Rockwell, Brattleboro, Vt.; A. B. Harris, Springfield, Mass.; Henry C. Robinson, Hartford, Conn.; Gouverneur Morris, New York.

Westbourne & Northwestern.—The officers of this new company are: President, George Brown; Vice-President, A. W. Ross; Secretary and Treasurer, E. P. Leacock; Solicitor, J. A. M. Aikins. Office at Winnipeg, Manitoba.

PERSONAL.

—Mr. W. B. Beamer has resigned his position as Master of Transportation of the Ft. Wayne & Jackson road.

—Mr. H. K. Smith, late Superintendent of the West Chester & Philadelphia Railroad, will shortly leave Philadelphia for Colorado, intending to settle in that state.

—Mr. Thomas Reynolds, Managing Director of the St. Lawrence & Ottawa Company, died June 28. His death was announced by a cable dispatch from London, England, where he had gone on business.

—Mr. James R. Reniff, formerly on the Chicago & Alton, and lately Superintendent of the Jacksonville (Ill.) Car Works, was presented by the employees of those works with a watch and chain on his recent retirement from the works.

—Mr. M. Elliott of Clinton, N. Y., who was a director of the Utica, Clinton & Binghamton Company, and was largely interested in iron mining in Northern New York and Canada, died suddenly July 6, at his mines near Kingston, Ont., where he had gone on some business.

—Mr. D. Waldo Lincoln, President of the Boston & Albany Company, was killed at New London, July 1. He was on a special train on the New London Northern road sent out to carry spectators of a college boat race, and was standing on the front of a car when the train started with a sudden jerk, breaking the coupling of the car on which he was, and throwing him down upon the track together with a lady who stood by him. The forward truck of the car passed over them both, killing the lady at once, and injuring Mr. Lincoln so that he lived but an hour. He was a son of Gov. Levi Lincoln and was born in 1813 in Worcester,

Mass., where he lived all his life. He began as a lawyer, but early became interested in railroads, especially those passing through Worcester. When the Western and the Boston & Worcester companies were consolidated as the Boston & Albany in 1867, Mr. Lincoln was chosen Vice-President and retained that office until the spring of 1878, when he became President on the retirement of Mr. Chester W. Chapin. Mr. Lincoln was widely known and was personally very much liked and esteemed; he was considered a careful and judicious manager, not a brilliant man, but having much executive ability, and thoroughly upright and reliable.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Six months ending June 30:	1880.	1879.	Inc. or Dec.	P. c.
Bur. Cedar Rap. & No.	\$982,390	\$653,874	I.	\$328,522 50.2
Chi. & Eastern Ill.	532,732	388,192	I.	144,540 37.2
Chi. Mil. & St. Paul	5,447,000	4,035,155	I.	1,411,845 35.0
Cleve. Col. Cin. & Ind.	2,315,000	1,809,919	I.	505,081 27.9
Hannibal & St. J.	1,132,826	893,059	I.	239,767 26.8
Louisville & Nashville	3,690,866	2,428,004	I.	1,262,772 52.0
Mo. Kan. & Tex.	1,080,761	1,242,807	I.	737,954 59.4
St. L. Iron Mt. & Southern	2,620,332	1,929,095	I.	691,237 35.8
St. L. & San Francisco	1,116,000	519,840	I.	596,160 114.7
Wabash, St. L. & P.	5,313,858	3,636,736	I.	1,677,122 46.0
Five months ending May 31:				
Canada Southern	\$1,552,579	\$1,063,263	I.	\$489,316 46.0
Del. & Hudson, leased lines	1,096,998	1,545,763	I.	451,235 29.1
Net earnings	830,288	569,758	I.	260,530 45.7
Month of May:				
Albany & Susquehanna	\$109,405	\$84,473	I.	\$24,932 29.5
Del. & Hudson, Pa. Div.	91,372	92,374	D.	902 1.0
N. Y. & Canada	53,482	37,238	I.	16,244 43.7
Ren. & Saratoga	141,391	130,308	I.	11,083 8.5
Month of June:				
Bur. Cedar Rap. & No.	\$153,378	\$110,179	I.	\$43,199 39.3
Chi. & Eastern Ill.	93,235	66,315	I.	26,920 40.8
Chi. Mil. & St. Paul	1,038,000	798,058	I.	239,942 30.0
Denver & Rio Grande	294,105	91,873	I.	202,232 220.1
Georgia	60,308	45,057	I.	15,251 34.1
Hannibal & St. J.	184,537	107,500	I.	76,977 71.5
Louisville & Nashville	644,083	303,508	I.	340,515 112.1
Mo. Kan. & Tex.	307,055	221,809	I.	85,156 38.4
Northern Pacific	250,600	188,000	I.	62,600 33.3
St. L. Iron Mt. & So.	365,300	281,921	I.	83,379 29.5
St. L. & San Francisco	172,825	87,252	I.	84,573 95.9
Texas & Pacific	153,065	120,815	I.	32,250 26.7
Union Pacific	1,930,000	1,283,000	I.	653,000 50.9
Wabash, St. L. & P.	952,048	519,201	I.	432,847 83.4
Third week in June:				
Minn. & St. L.	\$19,708	\$7,958	I.	\$11,750 146.9
Week ending June 28:				
Grand Trunk	\$204,481	\$150,822	I.	\$53,659 35.6

Grain Movement.

For the week ending June 26 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past seven years:

Northwestern		Northwestern Shipments.			Atlantic	
Year.	Receipts.	Total.	By rail.	By water.	P. c.	Receipts.
1874	4,437,825	3,307,404	702,198	21.2		3,005,703
1875	2,637,590	3,350,090	1,636,709	30.9		2,645,876
1876	3,863,510	3,605,703	1,784,518	49.5		4,481,981
1877	2,029,971	2,027,653	781,921	29.8		2,431,213
1878	3,851,821	2,024,876	824,773	31.4		3,788,708
1879	4,208,973	3,747,455	1,876,488	50.1		4,980,473
1880	5,611,004	6,693,080	2,303,110	34.5		10,576,372

The receipts of the Northwestern markets are about the same as for the two weeks previous this year, and much less than in the last three weeks of May, but much larger than in the corresponding week of any previous year. These receipts always fall off as the season of haying and harvesting approaches, and afterwards increase. The shipment of these markets, though the smallest for four weeks, were still exceedingly large, and have been exceeded but once before harvest in any other year, and very seldom after harvest. The rail shipments were the largest since navigation opened, and have seldom been equalled, even when rates were but half as high as they have been this year. The receipts of Atlantic ports for the week have never been equalled in any week before—indeed they have never before quite reached 9,000,000, which this week, ending June 26, they were 10,576,000 bushels—a striking proof of the capacity of our routes of transportation for carrying grain. It is only of late years that the total exports of the United States have exceeded the receipts of the Atlantic ports last June.

Of the Northwestern receipts for the week, Chicago had 49.6 per cent., St. Louis 15.6, Toledo 13.1, Peoria 8.4, Milwaukee 3.9, Detroit 3.5, Duluth 3.3, and Cleveland 2.6 per cent.

Of the immense receipts of the Atlantic ports, New York had 51.7 per cent., Philadelphia 16.8, Baltimore 11.5, Montreal 8.1, Boston 7.3, New Orleans 4.5, and Portland 0.1 per cent. The receipts of New York were the largest ever known; those of Philadelphia have been exceeded but once (last year), Baltimore's were very large, but have been exceeded five times this year; Montreal's were exceeded twice last year, but probably never before, and nearly every port had unusually large receipts. Philadelphia has now lead Baltimore for ten successive weeks.

The difference between lake shipments and Atlantic receipts since navigation opened, shows that the rail movement has been an enormous one in spite of the well maintained rates. In this period of 12 weeks the receipts of Atlantic ports have been very nearly 74,000,000 bushels, but the lake shipments have been but 50,086,000 bushels. A very considerable portion of the lake shipments are carried by rail from Buffalo and Erie to the Atlantic ports, and most of the supplies carried to Eastern interior points for consumption go all the way by rail.

Exports of grain and flour from Atlantic ports for four successive weeks have been:

	June 30.	June 23.	June 16.	June 9.
Flour, bbls.	51,300	74,146	81,247	102,199
Grain, bush.	8,632,476	6,857,611	5,631,611	6,642,138

This is a total of 308,892 barrels of flour and 27,763,944 bushels of grain, against 309,650 barrels of flour and 17,064,510 bushels of grain in the four weeks next previous. Buffalo receipts for the season up to June 30, are reported

as follows by the *Commercial Advertiser* of that city, flour in barrels and grain in bushels:

	Flour—1880.	Flour—1879.	Grain—1880.	Grain—1879.
By lake	374,286	164,250	38,714,112	14,576,937
By rail	450,000	644,500	15,358,400	21,228,000
Total	824,286	808,750	54,072,512	35,804,937

Shipments eastward of grain received by lake were as follows, in bushels:

	1880.	1879.	Increase.	P. c.
By canal	23,014,640	9,253,182	13,761,458	148.7
By rail	11,873,001	3,092,330	8,780,671	284.0
Total	34,887,641	12,345,512	22,542,129	182.6

Per cent. by rail.... 34.0 25.0 9.0

The canal opened April 20 this year, and May 8 last year.

Baltimore grain receipts for June were as follows:

	1880.	1879.	Inc. or Dec.	P. c.
Flour, barrels	60,145	79,136	D.	18,991 24.0
Wheat, bushels	2,528,115	1,450,066	I.	1,078,049 74.3
Corn	2,106,318	2,024,037	D.	757,719 25.9
Other grain	100,677	173,303	D.	6,626 3.8
Total grain	4,806,110	4,547,406	I.	313,704 6.9

Total flour reduced to wheat, 5,161,835 4,943,086 I. 218,749 4.4

For the six months ending June 30 the receipts were as follows:

	1880.	1879.	Decrease.	P. c.
Flour, barrels.....	538,462	616,094	77,632	12.6
Grain, bushels.....	22,009,666	25,851,658	3,841,992	14.9
Total bushels.....	24,701,976	28,932,128	4,230,152	14.6

Exports in June were 25,226 barrels and 13,022 sacks of flour, and 3,936,758 bushels of grain.

Coal Movement.

Coal tonnages for the week ending June 26 are reported as follows:

	1880.	1879.	Decrease.	P. c.
Anthracite.....	391,764	532,401	140,637	26.4
Semi-bituminous.	91,348	" " " " " "	" " " " " "	" " " " " "
Bituminous, Penna.....	40,826	" " " " " "	" " " " " "	" " " " " "
Coke, Pennsylvania.....	36,044	" " " " " "	" " " " " "	" " " " " "

A slight improvement is noted in the anthracite trade. There is some complaint that the curtailment of production is not fairly carried out, some of the companies showing an output but little less than that of last year, while others have a heavy decrease to report.

The coal tonnage of the New York state canals from the opening to June 28 was:

	1880.	1879.	Inc. or Dec.	P. c.
Anthracite	253,478	286,400	D.	32,922 11.5
Bituminous	67,123	41,007	I.	25,456 61.0
Total	320,599	327,407	D.	7,537 2.3

The canals opened April 20 in 1880, and May 8 in 1879.

Erie Canal.

The business of the canal at Buffalo from the opening to June 30 was as follows:

	1880.	1879.	Increase.	P. c.
No. boats cleared.....	3,418	1,605	1,723	101.7
Tolls received.....	\$242,523	\$104,607	\$137,916	131.9
Av. receipts per day...	3,418	1,974	1,442	73.0

The canal opened April 20 this year and May 8 last year.

Lake & Canal Rates.

The Buffalo *Commercial Advertiser* of July 3, says: "If any one has lingering doubt that a sixty-thousand-bushel lake vessel is not a pretty nice thing to have in the family this year, we invite him to compare the rates obtained last month with those for the corresponding month for several years, as shown in the following statement giving the average freight from Chicago to New York by lake on wheat and corn; and the average rate on the same cereals by canal from Buffalo to New York, for the month of June, in the years named:

	Lake—Wheat, Corn.	Canal—Wheat, Corn.
1871	5.7 5.3	10.1 9.1
1872	8.3 7.3	12.1 11.1
1873	6.5 5.8	10.6 9.5
1874	4.2 3.9	11.3 10.3
1875	3.0 2.6	6.9 6.3
1876	2.5 2.3	6.2 5.4
1877	2.4 1.9	5.0 4.3
1878	2.1 1.8	4.7 4.1
1879	2.1 1.6	4.1 3.6
1880	2.1 1.6	6.9 6.4

"If vessel-owners could live, or even pay expenses, at 2.1 cents on wheat and 1.8 cents on corn, last year, what must they be doing this season? But the fact is, very few vessels can make both ends meet at a two-cent freight. The rates this year, however, will compensate for the losses of 1879. It will be observed that the average for June was higher than that for any corresponding month since 1872. In fact, when the increased size of the vessels and the great saving effected in their management are taken into the account, we doubt if vessel owners have had a better June than the one just past, since the war.

"The rates by canal have been fairly good. When it is remembered that 23,000,000 bushels of grain have been shipped by canal this season, that the demand for canal tonnage has been active all the time, the wonder is that freights have not ranged higher than they have."

Lake Superior Iron Ore.

Shipments of iron ore from the Lake Superior Region from the opening up to June 30 were, in tons:

	1880.	1879.	Inc.
From L'Anse	12,476	11,127	1,349
From Marquette	194,651	129,296	65,355
From Escanaba	357,242	194,507	162,735
Total	564,369	334,930	229,439

Of the Escanaba shipments 179,328 tons came from mines in the Marquette District, and 177,914 tons from the Menominee mines. There were also shipped from Marquette 2,348 tons of pig iron. There were 12,160 tons of ore delivered to local points, making total for the month 576,529 tons.

RAILROAD LAW.

Rights of Sureties on a Bond.

A dispatch from Washington, July 5, says: "The decision rendered by Judges Drummond and Treat in the United States Circuit Court at Springfield, Ill., on June 28, in the case of Green B. Raum and John W. Mitchell against the Cairo & Vincennes Railroad Company and J. W. Drexel and Charles E. N. Tracey, Receivers, determined an interesting point of law. In 1873 Raum and Mitchell became sureties for the railroad company, at the request of General Burnside, its President, upon an appeal bond in a case which was taken to the Supreme Court of Illinois. While the case was pending the property of the company was placed in the

hands of receivers. The Supreme Court of Illinois affirmed the judgment against the company.

"Mr. J. Pierpont Morgan, who had in the meantime been elected President of the road, and Messrs. Drexel and Tracy, trustees for the bondholders, and J. S. Morgan, of London, principal owner of the stock and bonds of the company, all refused to pay the judgment. Raum and Mitchell, as sureties on the bond, were then compelled to pay the debt of the company. At the time Raum and Mitchell became sureties the rolling stock of the company was unencumbered, but before the payment of the debt by them the Receivers of the company, its President, trustees, etc., borrowed money, to secure the payment of which they issued a chattel mortgage on the rolling stock. The Court allowed this to be done, and at the end of the year the rolling stock was sold for about one-fourth of its value to pay the loan, J. S. Morgan becoming the purchaser.

"Messrs. Raum and Mitchell objected in court to the execution of the mortgage, and filed a petition praying for an order requiring the Receivers to pay their debt. After five years' delay the case came on for trial upon a statement of the facts. Judge Drummond held that where a surety upon an appeal bond of a railroad company was compelled to pay the debt, the property of the company being in the hands of receivers, and subject to the orders of his court, he would require the payment of the debt as a preferred claim."

THE SCRAP HEAP.

British Rail Exports.

The exports of railroad iron of all sorts from Great Britain to the United States and to all countries for the month of May last, and for the five months then ending were:

	Month of May—	Five Months—
	1880.	1879.
To United States.....	29,430	1,720
To all countries.....	60,802	49,839
Total.....	89,232	51,559

The increase is wholly in exports to the United States.

The total export of steel and iron rails have been, for the five months:

	1880.	1879.
Steel.....	106,977	118,070
Iron.....	58,364	18,004
Total.....	165,341	136,074

Of the 29,273 tons of rails exported to the United States this year, 22,968, or 78 per cent., were steel.

Proposals for Iron Beams.

Bids will be received by Major D. W. Flagler, United States Ordnance Corps, at Rock Island Arsenal, Ill., until July 14, for 330,000 lbs. 15-in. I-beams, 200 lbs. per yard; 480,000 lbs. 12-in. I-beams, 125 lbs. per yard; 127,000 lbs. 4-in. I-beams, 30 lbs. per yard; 90,000 lbs. 7-in. deck-beams, 58 lbs. per yard, and 20,000 lbs. angle and T-irons. Full bills and specifications can be had on application at the Arsenal. All the iron is to be delivered on cars at the Arsenal and within five months from date of contract, but the contractors may deliver it as much sooner as they please. Only bids from responsible firms able to perform the contract, or their agents, will be considered.

OLD AND NEW ROADS.

Arkansas & Missouri.—This company has been organized to build a railroad from Russellville, Ark., on the Little Rock and Ft. Smith road, northwest to the Missouri line in Benton County, 105 miles. The line is nearly the same as that of a proposed route from Hot Springs northwest, also lately organized.

Arkansas Northern.—This company has filed articles of incorporation for a railroad from Russellville, Ark., due north to the Missouri line, about 92 miles.

Atchison, Topeka & Santa Fe.—This company's Marion & McPherson Branch is now completed and opened for business to Lyons, Kan., 31 miles from the late terminus at McPherson Centre, and 78 miles from the main line.

The Cowley, Sumner & Ft. Smith Branch is now completed to Caldwell, Kan., near the Indian Territory line, and 22 miles southwest from the late terminus at Wellington. This makes the line 38½ miles long from the junction with the Arkansas City line at Mulvane Junction.

This company has issued circulars offering to exchange its stock for the stock of the Pleasant Hill & De Soto and Florence, El Dorado & Walnut Valley branches, one share of Atchison for two of the Pleasant Hill, and one of Atchison for ten of the Florence road. The stock of the Pleasant Hill & De Soto Railroad Company amounts to \$450,000, and of the Florence, El Dorado & Walnut Valley Railroad Company to \$450,000. This means a possible issue of \$270,000 more of Atchison stock. But four more branches of the Atchison system remains to be purchased by the lessee company.

Buffalo & Southwestern.—At the special meeting in Buffalo, July 6, the stockholders of this company voted not to ratify the agreement of consolidation with the Pittsburgh, Titusville & Buffalo Company.

Canadian Pacific.—The Ottawa (Can.) Herald of July 5 says: "It is said that the reason of Sir Charles Tupper's delay in going to Manitoba and of the probability of his visiting England first is that for some time past the government has been in treaty with representatives of a syndicate of English capitalists, who are now in Ottawa, with a view to forming a company with \$20,000,000 capital to build the whole of the Pacific Railway, the government giving a land subsidy of 50,000,000 or 80,000,000 acres and taking no further responsibility. The negotiations are said to be very nearly completed, and Sir Charles is only awaiting advice from the other side before going to England to ratify the agreement with the principals whose agents are here."

Central of New Jersey.—The Long Branch Division is now completed to Point Pleasant, N. J., 2½ miles south from the old terminus at Sea Girt, reaching a new summer resort. The extension has been built by a separate organization, the New York & Long Branch Extension Company. The principal work on it was a long pile bridge over the Manasquan River.

A second track was recently laid on the Long Branch Division from Sea Girt to Long Branch, 12 miles. Business on that division is now very heavy.

Chester & Lenoir.—Contracts for the bridge over the Catawba River have been let. The masonry has been awarded to George A. Deming & Co., of Augusta, Ga., and the superstructure—three Pratt truss combination spans of 110 ft. each—to Wilkins, Post & Co., of Atlanta, Ga.

Chicago & Northwestern.—On this company's Chicago & Dakota line trains now run to DeSmet, Dak., 32 miles west from the late terminus at Volga, and 103 miles from the Winona & St. Peter at Tracy. Work is progressing steadily westward.

On the lately bought Galena & Wisconsin road, an extension has been completed from McCormick, Wis., 23 miles to Montfort, where it connects with the Chicago & Tomah, also owned by this company. This division now consists of

a line from Galena, Ill., to Woodman, Wis., 76 miles, with branches from Plattville Junction to Plattville, 4 miles, and from Lancaster Junction to Lancaster, 12 miles.

The Toledo & Northwestern line in Iowa has been extended and opened for business to Gladbrook, 18½ miles from the main line at Tama, and seven miles beyond the late terminus at Garvin.

Chicago, Burlington & Quincy.—This company has completed and opened for business a new branch from Hastings, Ia., through the Nishnabotna Valley to Clayton City. It is 17 miles long.

Chicago, Milwaukee & St. Paul.—Work is still progressing actively on the extension of the Hastings & Dakota Division from Ortonville westward into Dakota. About 50 miles are now graded and tracklaying has been begun. A force is also at work on a branch starting from a point 12 miles west of Big Stone City, and running due north. The destination of this branch is not known to anyone outside of the company as yet.

Chicago, St. Paul, Minneapolis & Omaha.—A circular from the General Superintendent announces that for convenience of operation the various railroads constituting the Chicago, St. Paul, Minneapolis & Omaha Line will hereafter be operated as follows:

"That portion of the above-named line between Elroy and Lake St. Croix, including Hudson & River Falls Branch, and that portion of the line between Lake St. Croix and St. Paul, including the road between Stillwater Junction and Stillwater, will be operated as the Eastern Division.

"That portion of the line north of North Wisconsin Junction, heretofore known as the North Wisconsin Railway, will be operated as the Northern Division.

"That portion of the line between St. Paul and Sioux City, including Blue Earth Branch, Black Hills Branch, Sioux Falls Line, and Rock River Branch, will be operated as the Western Division."

Cincinnati Southern.—Cincinnati dispatches state that the Louisville & Nashville Company has made overtures for an agreement with this road for the maintenance of rates and for some division of business to Chattanooga. The exact nature of the propositions has not been made public.

Latest dispatches state that the Trustees have instructed the lessee company to continue the present passenger tariff of two cents per mile, which would indicate that the offers of the Louisville & Nashville had not been accepted.

Cleveland, Columbus, Cincinnati & Indianapolis.—The following statement is made for the six months ending June 30:

	1880.	1879.
Gross earnings.....	\$2,315,000	\$1,800,919
Expenses, taxes, interest and rentals.....	2,229,271	1,969,440

Surplus or deficit..... Sur. \$85,729 Def. \$159,521
This shows a gain of \$248,250 for the first half of the current year.

Columbus & Western.—It is stated that this company, successor to the Savannah & Memphis, is making arrangements to begin work at once on the extension of the road from Goodwater, Ala., northwest to Talladega, a distance of 25 miles.

Columbus, Chicago & Indiana Central.—The Trustees and Receivers are now paying, at the St. Nicholas National Bank, New York, the coupons due July 1 on Columbus & Indianapolis preferred first-mortgage, common first-mortgage and second-mortgage bonds, and on Columbus & Indianapolis Central first-mortgage bonds.

Darien.—A renewed effort is being made to secure the building of a railroad from Darien, Ga., northeast to the nearest point on the Savannah, Florida & Western road. The distance is about 30 miles, and the work would generally be light.

Denver & Rio Grande.—The track of this road at last reached Leadville, Col., on July 5, and regular trains will soon be running to that noted mining town. According to the company's statement Leadville station is 280 miles from Denver, 119 miles from Canon City, and 160 from Pueblo. Much of the grading on this road was done by the Atchison, Topeka & Santa Fe when it had possession of the line, but the work of finishing up and track laying has been pushed through with extraordinary speed.

The Denver, South Park & Pacific connects with the new road at Buena Vista, 87 miles from Leadville, and the distance from Denver to Leadville by that route is 172 miles.

The company announces that it will run Pullman sleeping cars and Horton reclining-chair cars on all its regular passenger trains from Denver and Pueblo to Leadville; so that one can now make the trip from New York to Leadville in a Pullman car all the way. Observation cars are also attached to trains from Canon City through the Royal Gorge and the great Cañon of the Arkansas, giving passengers a full opportunity for seeing the wild mountain scenery.

Detroit, Lansing & Northern.—The Stanton Branch is now completed to Big Rapids, Mich., 26 miles north by west from last year's terminus at Blanchard, and 64 miles from the main line at Stanton Junction. At Big Rapids connection is made with the Grand Rapids & Indiana, and the Big Rapids Branch of the Chicago & West Michigan.

Georgia & Mississippi.—The Selma (Ala.) Index says: "Gov. Colquitt, the late Senator Gordon and the new Senator, Joseph E. Brown, of Georgia, have recently organized a strong and wealthy company, of which Senator Gordon is President, to construct a railroad from Rome, Ga., to Aberdeen, Miss. This road will pass through the counties of Cherokee, Etowah, Blount, Fayette and Walker, of Alabama, the richest coal, iron and copper region of the world. This road will gather up the rich material in the territory of Alabama, and carry it to Atlanta, or some other Georgia town."

The line proposed is about 200 miles long, running nearly due west from Rome. It would cross the Alabama Great Southern near Gadsden, and the South & North Alabama not far from Blount Springs. It is generally parallel to, and north of the projected Georgia Western line from Atlanta.

Great Western of Canada.—It is again reported that the Wabash, St. Louis & Pacific Company has concluded a traffic contract with this company under which the Great Western will receive the bulk of the Wabash business eastward. It is said that the agreement will give the Wabash substantial control of the line to Suspension Bridge, making that point practically its eastern terminus. It is not stated how the connection between Toledo and Detroit is to be made, but the Detroit people are confident of being able to construct a new road from their city southwest to the Wabash's Eel River road at Butler, Ind.

Herkimer, Newport & Poland.—This company has been organized to build a narrow-gauge road from Herkimer, N. Y., on the New York Central road, northward by Newport and Middleville to Poland, a distance of 22 miles. The sum of \$88,000 has been subscribed to the stock. The bonded debt is limited by the articles of incorporation to

\$4,000 per mile. The office of the company will be at Newport, Herkimer County, New York.

Hot Springs, Clarksville & Northwestern.—This company has been organized to build a railroad from Hot Springs, Ark., to Clarksville and thence to the Missouri line near the western boundary of the state, a distance of 150 miles. It is one of several similar projects lately brought out.

Jersey City & Communipaw.—This company has made application to the New Jersey Circuit Court for a commission to condemn lands needed for the road. Argument on the application will be heard shortly. The case is one of much importance, for, although the proposed road is only a little over a mile long, its line is from Jersey City across the Morris Canal basin to the New Jersey Central station at Communipaw, and its construction would require a bridge across the canal basin, over which a hot fight has been carried on for several years past.

Lake Erie & Western.—A contract to grade the extension from Fremont, O., to Sandusky has been let to O. A. Loomis and A. A. Decret. The work was begun last week, and will be pushed as fast as possible.

Louisville, New Albany & Chicago.—Being legally prevented from refusing the business of the Adams Express Company, this company is now trying the plan of charging regular schedule rates for all freight received from the Express Company, and requiring full passenger fare for the messengers. At its depot in Louisville, also, the express agents are required to give the names and addresses of all packages delivered by them, each being treated as a separate shipment. The safe for money and valuable packages has for several days been refused, because the messenger declined to give a list of its contents.

Monarch Pass, Gunnison & Dolores.—This company is organized to build a railroad from Cleora, Col., on the Denver & Rio Grande and the Arkansas River, through Monarch Pass and by the Tomicha Valley to Gunnison, and thence to the Dolores country. The company hopes to build at least 20 miles this season.

Montour.—This road was built last year as a coal branch of the Pittsburgh & Lake Erie, running from that road at Montour Junction up Montour Run three miles to some coal mines. It has recently been extended to reach other mines, and is now 12 miles long, from Montour Junction to Jeffreys-town. Passenger trains have been put on the road.

Morgan's Louisiana & Texas.—New Orleans papers state that the branch now nearly finished from Vermilionville, La., to Opelousas, is to be extended from the last-named place northward to Alexandria, on the Red River. At that place it will connect with the projected New Orleans Pacific road, and there is talk of an extension farther north to Monroe, and probably into Arkansas.

Nantucket.—Work is progressing well on this road, the contractor, Loren Downs, of Boston, having nearly all the grading done. It extends from the steamboat landing in the town of Nantucket, Mass., directly across the island of the same name to the south shore and along the shore to Siasconset, being 10½ miles long. It is intended for summer travel, and will probably be closed through the winter. It is of 3-foot gauge, and will be equipped with two engines, six open passenger cars and two flat cars.

New Bonds.—Quite a number of new issues of bonds are now offered for sale or subscription, both by old companies and by those building new roads. Among them are noted the following:

The **Chicago, Milwaukee & St. Paul** offers, through Kahn, Loeb & Co., of New York, \$3,000,000 new 6 per cent. bonds secured by mortgage on the Chicago & Pacific road. They have 30 years to run, and are offered at 103½ and interest. These bonds are also offered abroad, through the Deutscher Vereinsbank, of Frankfurt-am-Main.

The **Ft. Madison & Northwestern** offers, through James M. Drake & Co., of New York, an issue of \$700,000 bonds secured by first mortgage on 100 miles of narrow-gauge road (15 miles completed). The bonds bear 7 per cent. interest and are offered at 90 and interest, purchasers also to receive a bonus of \$200 stock for each \$1,000 bond.

The **Louisville & Nashville** offers, through John J. Cisco & Son, of New York, part of an issue of \$5,000,000 new 6 per cent., 50-year bonds, secured by a first mortgage on the lately purchased New Orleans, Mobile & Texas road. These bonds are offered at 102½ and interest.

The **Memphis & Little Rock** offers, through Levy & Borg, of New York, its first-mortgage bonds, the total issue of which is \$2,600,000. These bonds are due in 1907, and are to bear 4 per cent. interest for two years and 8 per cent. for the remaining 25 years. The road is 135 miles long and was sold under foreclosure some years ago. A controlling interest is now held by the St. Louis, Iron Mountain & Southern Company.

The **Nevada Central** offers, through Hatch & Foote, of New York, its first-mortgage 6 per cent. bonds at the rate of \$8,000 per mile on 90 miles of completed narrow-gauge road, from Battle Mountain, Nev., to Austin.

The **Richmond & Allegheny** offers, through Robins, Powell & Co. and Closson & Hays, of New York, its first-mortgage 7 per cent. bonds, secured on the property, formerly the James River & Kanawha Canal, now being converted into a railroad. The amount of the issue is \$5,000,000, and they are offered at 95 and interest.

The **St. Louis, Iron Mountain & Southern** offers, through Morton, Bliss & Co., and Clark, Post & Martin, of New York, and Townsend Whelen & Co., of Philadelphia, \$690,000 car-trust certificates, secured by equipment to be bought with the proceeds. The title to the equipment is vested in the trustees, and a sinking fund is provided which will pay off the certificates in seven years.

The **Toledo, Delphos & Burlington** offers, through George Wm. Ballou & Co., of New York & Boston, its 6 per cent. bonds secured by first mortgage on 185 miles of narrow-gauge road (about 135 miles completed) between Toledo, O., and Kokomo, Ind. The bonds have 30 years to run; the total authorized issue is \$1,250,000, and they are offered at 90 and interest.

The **Union Pacific** offers, through Blake Brothers & Co., of New York & Boston, \$2,500,000 "collateral trust" 6 per cent. bonds, running till 1908. They are offered at 105 and interest, and are secured by deposit of Colorado Central, Utah & Northern, and Omaha & Republican Valley first-mortgage bonds. The deposited bonds bear 7 per cent. interest, and their amount is \$3,125,000.

New Brunswick.—A dispatch from St. John, N. B., July 5, says: "It is understood that a syndicate of Montreal and New York financiers, including also two of the present owners of the New Brunswick Railway, have purchased the road and all of the lands for about \$2,000,000, of which \$500,000 will be held by the two persons referred to and the other \$1,500,000 by outsiders, the present bondholders receiving the face value of their bonds, less 4 per cent. The control of the road will remain for the present in the hands of Mr. Gibson. It is said that the road is to be pushed through at once to the St. Lawrence, and that the road is to be made of standard gauge."

It is now of 3 ft. 6 in. gauge, and has a main line from Gibson, N. B., opposite Fredericton, to Edmundston, 161 miles, with a branch to Woodstock 11 miles long, and another from Aroostook, N. B., to Caribou, Me., 19 miles. The company has a very large land grant on the upper St. John River and its tributaries.

New York & New England.—A meeting of the stockholders of the old Boston, Hartford & Erie Company was held in New York last week, at which it was stated that there was some prospect that the property could be recovered from the present company, and that eminent counsel had been engaged to undertake the necessary suits. No action was taken, but an adjournment was had until the present week. Further action probably depends on the willingness of holders of the old stock to pay assessments to supply funds for the suit.

Northern Pacific.—A dispatch from Philadelphia, July 2, says: "It is learned from trustworthy sources that a large portion of the Northern Pacific Railroad Company's P. & O. Division bonds have been placed at about par, and that the company has an offer for the entire balance of the loan. Recent advices report that over 3,000 applications have been filed for lands belonging to this division, and for the coming year the sales were estimated at \$500,000."

The following statement is made for the Eastern Division (all the lines but the Pacific Division) for the year ending June 30:

	1879-80.	1878-79.	Increase.	P. c.
Gross earnings.....	\$2,124,338	\$1,282,553	\$841,785	65.6
Expenses.....	1,233,524	730,839	502,685	68.8
Net earnings.....	\$890,814	\$551,714	\$339,100	61.5

In the expenses for 1880 are included the cost of steel rails between Fargo and Bismarck and all road improvements on the line from Duluth west.

Ohio Central.—The grading on the extension of this road to Toledo is now reported finished from the line near Columbus, O., to Bucyrus, the crossing of the Pittsburgh, Ft. Wayne & Chicago. The contractors, Brown, Howard & Co., have put a large force at work between Fostoria and Toledo.

Ottawa, Burlington & Council Grove.—This company has been organized to build a railroad from Ottawa, Kan., westward through Burlington to Council Grove, about 70 miles. The capital stock is to be \$1,000,000. A survey of the line is now being made.

Pennsylvania.—The *North American* of July 7, says: "The straightening of the main line between this city and Pittsburgh, begun last year at Valley Creek, is to be continued until the line has been shortened as much as possible between the two termini of the great road. When the state works were first built it was cheaper to go round a hill than through it, and to skirt a valley rather than cross it. Now that hundreds and thousands of tons pass over the road every 24 hours, the cost of motive power becomes a very large factor, and it will pay to reduce the distance, eliminate curves and diminish grades. The work was begun about a year ago on a five-mile stretch between Glen Loch and Woodbine stations, and the entire new sections will be finished and in use by the coming fall. A portion of the improvement, about half a mile in length, between Oakland and Valley Creek, is completed, and will be ready for use in about two weeks. The heaviest work is at Valley Creek, two miles below Downingtown, where Nead & McFadden, the contractors, have about 200 men employed. A cut of 1,200 feet long and 65 feet deep is being made through solid rock, rendering necessary the use of two locomotives, four steam drills, and a steam shovel, together with many temporary railroad tracks. Between Woodbine and Oakland stations the new track crosses the old no less than nine times, and in the entire five miles the tracks cross one another fourteen times. Between Pomeroy and Coatesville, above Downingtown, the work of straightening at intervals, about four miles of the road commenced a few days ago."

"This is the time of year when the heaviest work is done on the line, and it is now being vigorously prosecuted. The new station in Camden is fast approaching completion, and will soon be a really ornamental though a plain and simple structure. It will be a vast improvement upon the old sheds that have stood there for the last eighteen years. There will be eight tracks under cover, affording ample room for the business of the Amboy Division, the West Jersey and the West Jersey & Atlantic. The company's yard is large enough for all purposes, and when the work is finished a marked improvement will have been completed. The grounds around the new station at West Chester have been laid out very handsomely, but the new station is not yet finished, the officials of the company having ordered some changes in the floor. The Belvidere-Delaware Division is to be made to blossom like the rose, so that the passenger to the Water Gap will be surprised at the changes made this summer. The gardener has been kept at work, and the grounds around the stations have been laid out like those along the main line. At Manunka Chunk, the terminus of the road, extensive flower gardens have been laid, and the mountain springs used for making miniature lakes. While the company is thus looking out for the comfort of its patrons, it is not unmindful of its men, who contribute so much to the efficiency of its working. Arrangements have therefore been made for the erection of houses for train-men at the stations where they have to change and wait over—Jersey City, Philadelphia, Columbia, Harrisburg, Altoona and Pittsburgh. They will contain reading-rooms, bath-rooms, with hot and cold water, dormitories and closets; and they will be so managed by the local officials as to be kept in order, and yet be brought into general use by the train-men. Meanwhile the work on the Filbert street extension is going on rapidly, and it looks as if by the new year the locomotive would come rolling into Merrick street. At Thirty-first street, opposite Hamilton, a fine round-house is going up, and more cattle-sheds are to be built at the abattoir. The road along the river front is now in use, and iron is being delivered for the bridge across the river. A platform, bridge, coal chute and tipples are building, one mile east of Greensburg, for the purpose of coaling engines. An artesian well is being sunk at Wall's station, near Pittsburgh, with good prospects."

Pittsburgh, Cincinnati & St. Louis.—This company is making many improvements on its line this season. A new iron bridge is to replace the old one over the Monongahela at Pittsburgh. A number of small bridges are to be replaced by stone arches, and work has already been begun on several of them. A second track is to be laid between Nobletown and McDonald's, and new sidings put in at several points. A number of new passenger cars and two new mail cars are being built at the Steubenville shops.

Pittsburgh, Titusville & Buffalo.—At the special meeting in Philadelphia, July 6, the stockholders of this company voted, by a nearly unanimous vote, to approve and ratify the contract for the consolidation of this company and the Buffalo & Southwestern. All necessary arrangements for completing the consolidation were made.

A Buffalo dispatch, however, states that the Buffalo & Southwestern stockholders voted not to ratify the agreement.

Philadelphia & Reading.—On July 1 a bill was filed in the United States Circuit Court asking for a foreclosure of the general mortgage of 1874, under which \$19,686,000 bonds have been issued. The bill was filed for the Farmers' & Mechanics' National Bank, of Philadelphia, holder of only a small amount of bonds, and is evidently a friendly suit. The bill asked for the appointment of Receivers, and the Court granted the petition so far as to extend the appointment of the present Receivers so far as to cover this case also, a merely formal action.

The Receivers' statement from May 22 to June 22, one month, is as follows, in brief:

Balance received from P. & R. Co.....	\$1,849,220
Current receipts of road.....	1,483,085.58
Notes payable, accounts, etc.....	234,079.87
Receivers' certificates.....	1,000,000.00
Total.....	\$2,716,014.74
Disbursements.....	2,567,211.27

Balance on hand.....\$151,803.47

Disbursements include \$862,602.20 for current expenses of road, \$520,035.44 for interest paid, \$159,237.76 for rentals of leased lines, besides other items.

The Coal & Iron Company's account shows total receipts of \$417,043.55, including only \$3,465.07 from the company. The disbursements were \$406,194.90, leaving a balance of \$10,848.65. The disbursements were chiefly on current accounts, but include \$30,252.04 for interest on land mortgages, and \$40,470.27 for taxes.

The July interest was paid on the first mortgage and those consolidated mortgage bonds on which it was due July 1. Default was made on the debenture bonds, the debenture convertible bonds, the general mortgage bonds and the Perkiomen sterling mortgage guaranteed bonds, on all of which payment in cash was to have been resumed, after partial payment in scrip for three years. It is evidently the intention to keep the leases good, however, as the interest due on North Pennsylvania bonds was paid, and, indeed, all the rental dividends and interest were paid as due, so far as reported.

St. Johnsbury & Lake Champlain.—The following circular is dated July 1:

"Notice is hereby given that the St. Johnsbury & Lake Champlain Railroad Company have taken possession of the railroad formerly known as the Vermont Division of the Portland & Ogdensburg Railroad line, and will hereafter operate the same.

"All employees should govern themselves accordingly; and accounts hereafter with connecting roads should be kept with, and communications addressed to, this company."

St. Paul & Sioux City.—Notice is given that equipment bonds numbered 1, 2, 13, 14, 16, 42, 43, 44, 49, 50, 52, 53, 54, 55, 56, 57, 59, 61, 62, 63, 64, 65, 67, 69, 71, 74, 76, 78, 79, 80, 82, 89, 90, 91, 94, 95, 96, have been drawn for redemption by sinking fund. Interest thereon will cease July 1, 1880, and the drawn numbers, and all other bonds of said issue will be redeemed on presentation at Metropolitan National Bank, New York.

Securities on the New York Stock Exchange.—The following securities have been put on the lists at the New York Stock Exchange:

Brooklyn & Montauk.—Preferred stock, \$1,100,000 common stock, \$900,000. This is a reorganization of the Southern, of Long Island.

Chicago & Northwestern.—An additional amount, \$4,040,000, of the sinking fund 6 per cent. bonds of 1879, secured on new lines of the company. The total amount authorized is \$15,000,000, of which \$2,400,000 have already been issued.

Chicago, St. Paul, Minneapolis & Omaha.—Preferred stock, \$9,755,000; common stock, \$13,755,000; consolidated 6 per cent. bonds, \$14,700,000. Total amounts authorized are \$30,000,000 common stock, \$20,000,000 preferred stock, and \$30,000,000 bonds.

Shenandoah Valley.—The track on the extension to Hagerstown, Md., is now laid from Hagerstown south six miles to St. James College. From that point south to the Potomac River, opposite Shepherdstown, 10 miles, it is expected that the track will all be laid this month. Work is also in progress on the bridge over the Potomac at Shepherdstown, which will probably be finished in two weeks.

Texas & Pacific.—Work is being pushed steadily on the extension from Weatherford, Texas, west, and the track is expected to reach the Brazos River soon.

Work has begun also on the extension of the Transcontinental Division from Sherman west to Whitesboro.

Notice is given that scrip will be issued for one year's interest (for the year ending June 30) at 7 per cent. on the income and land grant bonds of this company. The scrip is now ready for delivery at the office of the company in Philadelphia.

Texas & St. Louis.—This company sends us the following statement under date of July 5:

"The track of this road has been extended from Pittsburgh to Big Sandy, Tex., 32½ miles. At Big Sandy connection is made with the old line (formerly Tyler Tap), giving the company an unbroken line from Texarkana to Tyler, 126 miles. Pittsburgh is 73 miles, Big Sandy 105½ and Tyler 126 miles from Texarkana. This completes the First Division. Active work is now in progress on the Second Division from Tyler to Waco. The company has consummated a contract with the Western Union Telegraph Company to immediately construct a telegraph line along the company's road, and it is expected to be completed to Tyler within 60 days."

Troy & Greenfield.—Proposals will be received by the Manager, G. Clinton Gardner, at his office in North Adams, Mass., until July 15, for the building of a new passenger station at Greenfield. Plans and specifications can be seen at the office in North Adams, or at the office of H. W. Hartwell, Architect, No. 18 Post Office square, Boston.

Illinois Central.—The Pontiac Branch of the Middle Division is now completed to a junction with the North Division at a point two miles south of Minonk, Ill., and 16 miles west of the late terminus at Pontiac. The Middle Division now has 98 miles of track, one line running from Otto (4 miles south of Kankakee) to Martin, 61 miles, and this is soon to be extended to Bloomington. The other line leaves this at Kempton Junction, 25 miles from Otto, and runs due west through Pontiac to the North Division near Minonk, 37 miles.

Union Pacific.—The Omaha Herald of recent date says: "The Union Pacific shipped last Friday 100 car-loads of ties to Julesburg, to be used on the extension from that point to Greeley, a distance of about 140 miles. There will be very little grading to do, as the line runs along the Platte River, and the country is almost as level as a floor. This branch will be completed this year, and will make a saving of 60 miles between Omaha and Denver. It is being built

for the better handling of the immense and rapidly increasing Colorado business."

It is stated that the company will soon extend the Summit County branch, now running from Echo, Utah, to coal mines, into the Ontario mining district.

There is a report that the company will soon begin work on the Wyoming, Black Hills and Montana road, from Cheyenne through the Powder River and Big Horn districts to Ft. Phil. Kearney.

Utah Southern Extension.—Track on this road is now laid to Frisco, Utah, 15 miles beyond the late terminus at Milford, 122 miles from Juab, where this road begins, and 227 miles from Salt Lake. Between Milford and Frisco there is some very heavy work, and the road is a continuous up grade. About Frisco there are several noted silver mines.

Walla Walla & Columbia River.—This road has recently been extended from Walla Walla, Wash. Ter., to Blue Mountain, 19 miles. This makes the road 51 miles long from the Columbia River at Wallula.

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Kansas City, Ft. Scott & Gulf.

This company owns a line from Kansas City, Mo., south to Baxter Springs, Kan., 160 miles, with a branch or extension from Baxter Springs east to Joplin, Mo., 16 miles, making 176 miles in all. It also works under contract the Ft. Scott, Southeastern & Memphis, from Ft. Scott to Coal Vale, 14 miles, but the earnings of that line are not included. The Joplin Branch was opened about the middle of October last. The company is successor through foreclosure to the Missouri River, Ft. Scott & Gulf and its report is for the year ending Dec. 31.

The general account is as follows:

Contracts for preferred stock.....	\$2,750,000
Common stock.....	4,000,000
Total stock (\$38.352 per mile).....	\$4,750,000
Bonds (\$22.727 per mile).....	4,000,000
Bills payable, accrued interest, etc.....	205,815
Land income account.....	33,545
Total.....	\$10,980,360
Road and equipment (\$58,966 per mile).....	\$10,378,019
Kansas City Union Depot.....	3,409
Stocks and bonds.....	240,005
Balances of accounts.....	155,117
Cash and receivables.....	49,329
Income account.....	5,322
Total.....	\$10,980,360

The bonds are all of the same issue, first-mortgage bonds bearing 7 per cent. interest.

The earnings for the year were as follows:

	1879.	1878.	Inc. or Dec.	Pc.
Gross earnings.....	\$865,804	\$833,835	I. \$32,029	7.4
Expenses.....	553,053	611,781	D. 48,728	8.0
Net earnings.....	\$332,811	\$222,054	I. \$110,757	50.0
Gross earn. per mile.....	5,496	5,211	I. 285	5.5
Net " ".....	2,042	1,388	I. 654	47.1
Per cent. of exp's.....	62.85	73.37	D. 10.52	14.3

The yearly interest charge on the first mortgage bonds is \$280,000. Deducting this from the net earnings there remains a surplus of \$52,811, which was spent for new equipment, with some additions from cash assets.

The report of the twelve months' business of the road is given for convenience in making comparison. In reality, the present Kansas City, Fort Scott & Gulf Railroad Company has had but a nine months' existence, commencing with April 1, 1879. The net revenue of the Land Department during the nine months of 1879 was \$33,545, and, as none of it was required for payment of interest on the first mortgage bonds, this amount has been turned over to the trustees in conformity with the terms of the mortgage, and enough cash advanced to make their first advertisement for 1880 to enable them to make the sinking fund provision of the mortgage. As to the bonds and stock of other corporations owned by this company, the market value of these securities, Jan. 1, 1880, is conservatively estimated as at least \$400,000, although they appear on the books of the company at the low valuation of \$240,005.

These securities are not covered by the mortgage, and the

intention of the board is to reserve them as a fund to provide for any new equipment needed for the road, and for any other special expenditure. The estimated cost of additional equipment in 1880 for the increasing business of the road is \$200,000, and by applying proceeds of the sale of the above-mentioned securities to this and kindred purposes, the entire net earnings of the road should be left free for division among its stockholders. During the past year 13.3 additional miles of steel track were laid. Eighteen more miles, contracted for last October, will be laid in 1880. There have been added to the company's equipment 150 coal cars, two switching engines and one freight engine.

During the whole of 1879 the Land Commissioner sold 36,406 acres of land for \$160,733, being an average of \$4.40 per acre. Eighty-four town lots were sold for \$5,791. The cash receipts of the Land Department for twelve months, on sales of lands, town lots, contracts, royalties, taxes from delinquents, and profits on county orders, were \$164,119. From April 1 to Dec. 31, there were sold 32,759 acres of land for \$139,078 and 64 town lots for \$4,076, making \$144,354 in all.

Cincinnati, Hamilton & Dayton.

This Company works the following lines:

	Miles.
Cin., Hamilton & Dayton, owned. Cincinnati to Dayton.....	60
Dayton & Michigan, leased. Dayton to Toledo.....	142
Cin., Richmond & Chicago, leased. Hamilton, O., to Richmond, Ind.....	45
Cin., Ham. & Indianapolis, Hamilton, O., to Indianapolis.....	98
Total.....	345

The Cincinnati, Hamilton & Indianapolis is practically owned, though nominally under a separate organization. The report is for the year ending March 31, 1880.

The equipment consists of 82 engines; 62 passenger, 3 mail and 21 baggage cars; 1,135 box, 177 stock, 218 coal, 449 flat and 31 caboose cars; 5 wrecking, 72 hand and 71 truck cars. Changes during the year were an increase of 1 passenger, 53 box, 3 stock and 53 flat cars; a decrease of 2 engines, 2 baggage and 12 coal cars. The new cars have all been charged to expenses.

The general account is as follows:

Stock (\$58,333 per mile).....	\$3,500,000.00
Bonds (\$49,333 per mile).....	2,900,000.00
Surplus earnings.....	1,650,605.09
Interest, dividend and rental accounts.....	263,011.05
Bills, accounts and balances payable.....	250,928.24
Total.....	\$8,630,544.38
Road, etc. (\$88,637 per mile).....	\$5,318,203.48
Materials, etc.....	105,148.46
Stocks and bonds.....	947,880.87
F. H. Short, Trustee.....	86,924.57
Leased lines accounts.....	1,507,700.39
Accounts and balances receivable.....	98,820.59
Cash and cash assets.....	445,800.02
Total.....	\$8,630,544.38

The bonds are \$1,242,000 first-mortgage, \$494,000 second-mortgage, and \$1,225,000 consolidated bonds.

The stocks and bonds are owned chiefly of the leased lines; their par value is \$2,593,900.

The capital accounts of the leased lines are as follows:

	Dayton & Mich.	Cin., Rich. & Chi.	Cin., Ham. & Ind.
Stock.....	\$3,612,824	\$382,000	\$2,850,000
Bonds.....	2,728,800	625,000	2,850,000
Due lessees.....	542,215	.....	867,045
Other accounts.....	104,921	25,742	.....
Total.....	\$7,048,760	\$1,033,342	\$3,717,045

The Cincinnati, Hamilton & Indianapolis bond account includes \$350,000 over-due coupons. By the compromise lately agreed on through arbitration, the bonds of this road will be reduced to \$1,800,000, the lessee canceling \$700,000 bonds held by it; regular payment of interest is resumed from Jan. 1880, and the bondholders fund four coupons in preferred stock, which is to have no voting power as long as interest is regularly paid.

The earnings of the whole system for the year were:

	1879-80	1878-79	Inc. or Dec.	P. c.
Passengers.....	\$837,335.75	\$720,929.80	I. \$116,405.95	16.2
Freight.....	1,493,977.48	1,376,418.44	I. 117,559.04	8.5
Mail and ex-press.....	83,128.18	78,915.03	I. 4,213.15	5.3
Miscellaneous.....	99,531.98	90,234.86	I. 9,297.12	10.3
Ind'l's pool.....	44,429.27	20,277.84	I. 18,151.43	89.0
Dayton pool.....	20,413.94	.....	I. 20,413.94	.....
Total.....	\$2,578,816.60	\$2,298,775.97	I. \$280,040.63	.....
Deduct Dayton pool.....	.....	16,203.25	D. 16,203.25	.....
Total.....	\$2,578,816.60	\$2,282,572.72	I. \$296,243.88	13.0
Expenses and taxes.....	1,602,767.47	1,543,001.35	I. 149,766.12	9.7
Net earnings.....	\$886,049.13	\$739,571.37	I. \$146,477.76	19.8
Gross earnings per mile.....	7,474.83	6,618.15	I. 856.68	13.0
Net.....	2,508.26	2,143.60	I. 424.57	19.8
Per cent. of expenses.....	65.04	67.00	D. 1.96	2.9

Both the Indianapolis and the Dayton pools have continued to work very smoothly and satisfactorily.

The income account is as follows:

Net earnings, as above.....	\$886,049.13
Interest on C. H. & D. bonds.....	\$191,520.00
General interest.....	26,640.02
Dayton & Michigan interest and dividends.....	323,252.73
Cin., Rich. & Chi. interest.....	43,150.85
Total.....	\$844,570.20

Net balance.....	\$301,478.93
Dividend declared, 3 1/4 per cent.....	122,500.00
Balance.....	\$178,978.93

No charge is made in this account for interest on Cincinnati, Hamilton & Indianapolis bonds. The receipts and expenses were divided as follows:

	Earnings.	Expenses and interest.	Net balance.	per m.
C. H. & D.....	\$850,624.24	\$757,801.60	\$192,822.64	15.844
D. & M.....	1,040,862.08	965,374.05	45,488.03	7.330
C. R. & C.....	214,556.08	202,169.91	12,386.17	4.969
C. H. & I.....	372,773.04	321,962.11	50,810.93	3.804
Total.....	\$2,578,816.60	\$2,277,337.67	\$301,478.93	\$7.475

Had interest on the \$1,800,000 outstanding Cincinnati, Hamilton and Indianapolis bonds been charged there would have been a deficit of \$75,189.08, and the net surplus of all the roads would be only \$175,478.93. Interest will be paid from Jan. 1.

The earnings per train mile and per unit of traffic were as follows, in cents, for three years past:

	1879-1880.	1878-79.	1877-78.
Per passenger-train mile.....	107.400	108.000	102.800
Per freight-train mile.....	225.000	227.000	190.500
Per passenger per mile.....	2.302	2.193	2.450
Per ton per mile.....	1.310	1.391	1.308

Renewals include on the Cincinnati, Hamilton & Dayton, 40,695 ties; Dayton & Michigan, 2,009 tons steel rails and 69,890 new ties; Cincinnati, Richmond & Chicago, 741 tons steel rails and 16,781 ties; Cincinnati, Hamilton & Indian-

apolis, 1,261 tons steel rails and 32,226 ties. Extensive repairs to bridges and buildings were made on all the lines. Toledo dock was supplied with a derrick and steam engine. All work was charged to expenses.

The report, after referring to the settlement of the Cincinnati, Hamilton & Indianapolis bond difficulty, says: "The 700 bonds held by this company are in the Safe Deposit Company, subject to the conditions of the terms of the award of the arbitrators, awaiting the full execution of said award. No entries of this transaction have as yet been made in the accounts of the company. Up to the present time the holders of 1,336 out of the 1,800 bonds have accepted its terms, and the interest on such bonds, with all others assenting to said award, will be paid July 1."

The report also says: "The bills payable account, as it appears in the Treasurer's balance, shows, as compared with March 31, 1879, a reduction of \$286,528.90, leaving a balance at the end of the year of \$13,185.48 not then due, which has since been paid."

"The company now owes no floating debt except \$28,076.48 on account of its guarantee of interest on the Cincinnati, Richmond & Ft. Wayne bonds, now in controversy in the United States Court, as to the legality of the obligation of this company."

"Payment of the outstanding first-mortgage 7 per cent. bonds, amounting to \$1,242,000, maturing May 1, 1880, has been provided for by a sale, at par, of consolidated mortgage bonds having 26 years from October, 1879, to run, and bearing interest at the rate of 6 per cent. per year."

"The directors are gratified upon being able to report to the stockholders the improved condition of the company. Its floating debt, which in 1877 amounted to nearly \$700,000, has all been paid off; the credit of the company, which was then exhausted, has been fully restored; the interest on the bonded debt has been reduced; dividends on the stock have been resumed with good promise of continuance, and all the affairs of the company are in a prosperous condition."

Grand Rapids & Indiana.

This company owns a line from Fort Wayne, Ind., northward to Potosky, Mich., on Little Traverse Bay, 332 miles. It works under lease the Cincinnati, Richmond & Fort Wayne road, from Fort Wayne to Richmond, 91 miles, and the Allegan & Southeastern road, from Monticello, Mich., to Allegan, 11.5 miles. It also works under contract the Traverse City road, from Walton, Mich., to Traverse City, 26 miles. This makes 460.5 miles worked, but the report for the year ending Dec. 31 covers only the 332 miles owned.

The general account at the close of the year was as follows:

Stock (\$8,434 per mile).....	\$2,800,000
Funded debt (\$24,096 per mile).....	8,000,000
Bills and accounts payable, etc.....	134,675
Bills payable and coupons held by Penna. Co.....	474,343
Coupons held by Penna. R. R. Co.....	1,724,669
Total.....	\$13,133,786
Road, etc. (\$33,410 per mile).....	\$11,092,008
Supplies on hand.....	60,008
Cash and receivables.....	337,205
Loss as shown by income account.....	1,644,387
Total.....	13,133,686

Of the bonds \$4,000,000 are guaranteed by the Pennsylvania Railroad Company; \$3,018,000 are first-mortgage bonds, not guaranteed, and \$987,000 income bonds. The unguaranteed bonds are being exchanged for income bonds as fast as possible.

The earnings for the year were as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Passengers.....	\$407,830	\$425,883	I. \$18,053	4.2
Freight.....	795,059	600,558	I. 194,501	32.4
Express and mail.....	35,091	34,381	I. 710	1.9
Miscellaneous.....	47,154	40,807	I. 6,347	15.6
Total.....	\$1,345,134	\$1,200,629	I. \$144,505	12.0
Expenses.....	912,489	958,170	D. 45,681	4.8
Net earnings.....	\$432,645	242,459	I. \$190,186	78.4
Gross earn. per mile.....	4,052	3,610	I. 442	12.0
Net.....	1,303	730	I. 573	78.4
Per cent. of exps.....	67.84	79.81	D. 11.97	15.0

A considerable increase in business with a large reduction in expenses, gave a great increase in net earnings. It is believed that earnings will continue to increase, as the country on the line is filling up with settlers.

At the end of the year there had been issued a total of \$987,000 of incomes in exchange for same amount of first-mortgage 7 per cent. bonds, of which \$192,000 were exchanged during the year. This amount would have been larger had it been possible to purchase more bonds within the prescribed rates, par and interest. The excess of interest over net earnings during the year has been \$58,685. Add to this \$26,320 for liability on account of Cincinnati, Richmond & Fort Wayne Road, and the total deficiency has been \$85,005, against \$209,520 for 1878. There was paid the entire interest on the unguaranteed and \$70,000 on account of that on the guaranteed bonds during the year. Net decrease of floating liabilities was \$41,080; floating assets have increased \$83,973, making a total improvement of \$125,054. The deficiency in interest is met by the guarantors.

The report gives very little information as to the land department, and merely says: "Land sales have been very good, although not so large as in 1878. We have sold 80,922 acres, including 'lands in common,' for \$359,007. We sold 14,181 acres farming lands to 278 purchasers for actual settlement; average 51 acres to each. Average price per acre of the total sales to date has been \$13.95, an increase in average of \$1.62 since Jan. 1, 1879."

Northeastern (South Carolina).

This company owns a line from Charleston, S. C., north to Florence, 102 miles. Its report is for the year ending Sept. 30.

The equipment consists of 14 locomotives; 13 passenger and 6 mail and baggage cars; 84 box and 55 flat cars; 7 gravel cars.

The capital account is as follows:

Stock (\$8,817 per mile).....	\$899,350.00
Debt (\$11,674 per mile).....	1,186,704.33
Interest outstanding.....	17,939.39
Profit and loss.....	119,036.61
Total.....	\$2,223,030.63
Road, etc. (\$21,090 per mile).....	\$2,148,130.65
Accounts.....	74,899.98
Total.....	2,223,030.63

The debt consists of \$820,000 first mortgage 8 per cent. bonds; \$236,000 second mortgage 8 per cent. bonds; \$85,000 preferred stock; \$2,000 old bonds never presented for payment, and \$42,704.33 certificates of indebtedness, payable in annual installments of 10 per cent. There are also \$88,000 second mortgage bonds deposited as security for preferred stock and not included in debt, as they are not a distinct liability.

The chief items of freight were as follows:

	1878-79.	1877-78.	Decrease.	P. c.
Bales cotton.....	62,153	78,560	16,407	20.9
Barrels naval stores.....	107,004	132,706	25,702	19.4

The loss in naval stores was due to continued depression

in that trade, and the gradual exhaustion of the country adjacent to the line.

The earnings for the year were as follows:

	1878-79.	1877-78.	Inc. or Dec.	P. c.
Passage.....	\$86,007.28	\$83,531.61	I. \$2,475.67	3.0
Freight.....	245,068.20	265,607.66	D. 20,539.46	7.7
Mails, etc.....	15,192.48	14,505.55	I. 686.93	4.4
Total.....	\$246,267.96	\$363,644.82	D. \$117,376.86	4.8
Expenses.....	210,903.58	201,144.38	I. 9,759.20	4.9
Net earnings.....	\$135,364.38	\$162,500.44	D. \$27,136.06	16.6
Gross earnings per mile.....	3,394.78	3,565.15	D. 170.37	4.8
Net earnings per mile.....	1,327.10	1,593.14	D. 266.04	16.6
Per cent. of expenses.....	60.80	55.31	I. 5.49	9.0

The loss in earnings was partly due to the diversion of the Charlotte, Columbia & Augusta business, in consequence of the change in ownership of that road, and partly to falling off in shipments of naval stores. Expenses were increased by heavier renewals and by the greater proportion of through passenger travel, requiring the use of sleeping cars.

The income account was as follows:

Net earnings.....	\$135,364.38
Extraordinary expenses, new equipment, old claims, etc.....	\$16,623.98
Interest account.....	95,835.71
Back taxes, etc.....	12,102.64
Total.....	124,562.33

Surplus for the year.....	\$10,802.05
Add balance, Sept. 30, 1878.....	108,234.76
Balance, Sept. 30, 1879.....	\$119,036.81

Renewals during the year included 701 tons of steel and 381 tons of iron rails, and 350 tons of steel rails contracted for during the current year. An unusual amount of work was done in ditching, widening cuts and other improvements of road-bed. The locomotives are nearly all old, and need to be replaced by heavier ones, most of them being too light for the service now required.

The causes which produced a loss in freight business last year—and a reduction of rates was due to the same causes—will probably continue to operate, but a new source of business has been opened in the completion of the Cheraw & Salisbury road to Wadesboro, N. C., and its probable extension beyond that point. This opens up a new country, hitherto tributary entirely to other lines.

Portland & Ogdensburg.

This company owns a line from Portland, Me., to Fabyan, N. H., 91 miles, and a short line from Scott's Mills, N. H., to Lunenburg, Vt., 3 miles, making 94 miles in all. Its trains run over 20 miles of the Boston, Concord & Montreal track, from Fabyan to Scott's Mills. Its latest report is for the year ending Sept. 30, 1879.

The equipment consists of 9 locomotives; 11 passenger, 2 smoking, 4 observation and 4 baggage cars and 3 brake-vans; 45 box, 25 hay, 20 ice and 92 platform cars; 3 snow-plows; 1 crane car and 1 ballast unloader. The brake-vans are used on the heavy grades through the White Mountains in New Hampshire.

The general account is as follows:

Stock (\$11,513 per mile).....	\$1,052,185.55
Bonds (\$28,181 per mile).....	2,649,000.00
Bills and accounts payable.....	230,527.78
Profit and loss.....	71,202.11
Total.....	\$4,002,915.44
Road and equipment (\$41,090 per mile).....	\$3,862,443.42
Materials on hand.....	25,130.87
Cash and receivables.....	115,341.15
Total.....	4,002,915.44

Of the bonds \$1,299,000 were sold and \$1,350,000 exchanged for a like amount of Portland city bonds issued in aid of the road.

The earnings for the year were as follows:

	1878-79.	1877-78.	Inc. or Dec.	P. c.
Passengers.....	\$103,261.01	\$103,548.95	D. \$287.94	0.3
Freight.....	155,014.97	150,741.25	I. 4,273.72	2.8
Mail, express, etc.....	13,217.72	16,492.87	D. 3,275.15	19.8
Total.....	\$271,493.70	\$270,783.07	I. \$710.63	0.3
Expenses.....	179,198.42	194,209.12	D. 15,010.70	7.7
Net earn.....	\$92,295.28	\$76,573.95	I. \$15,721.33	20.5
Gross earn. per mile.....	2,888.23	2,880.67	I. 7.56	0.3
Net earn. per mile.....	981.80	814.62	I. 167.24	20.5
Per cent. of exps.....	66.00	71.72	D. 5.72	8.0

The gross earnings show practically no change. There was a considerable saving in expenses, resulting in a large comparative increase in net earnings. The earnings are still very light. Expenses include \$9,750 paid to the Boston, Concord & Montreal for hauling trains.

The income account was as follows:

Balance, Sept. 30, 1878.....	\$54,214.96
Interest, old accounts, etc.....	638.58
Earnings for the year.....	271,493.70
Total.....	\$326,347.24

Working expenses.....	\$179,198.42
Old accounts.....	280.65
Coupons on first-mortgage bonds.....	48,000.00
Coupons on first-mortgage scrip.....	18,720.00
Interest account.....	8,937.06
Total.....	255,145.13

Balance, Sept. 30, 1879.....	\$71,202.11
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The company has paid interest on its first-mortgage bonds and also on the scrip issued under the agreement of August, 1877, and has reduced the Dalton construction loan by \$9,427.96.

The traffic for the year was as follows:

Train mileage:	1878-79.	1877-78.	Inc. or Dec.	P. c.
Passenger.....	132,640	131,674	I. 966	0.7
Freight.....	57,963	61,074	D. 3,111	5.4
Service and switching.....	20,299	30,379	D. 10,080	33.4
Total.....	210,902	223,127	D. 12,225	5.8
Passengers carried.....	82,514	84,210	D. 1,696	2.1
Tons through freight.....	26,179	25,247	I. 932	3.5
Tons local freight.....	94,700	84,528	I. 10,172	12.1
Total tons.....	120,879	109,775	I. 11,104	10.1